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## **Buena Vista Creek Channel Maintenance Project Biological Resources Technical Report**

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# **FEBRUARY 2013**



**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

**TABLE OF CONTENTS**

<b><u>Section</u></b>	<b><u>Page No.</u></b>
<b>1.0 INTRODUCTION.....</b>	<b>1</b>
1.1 Project Description.....	1
1.2 Regional Planning Context .....	9
<b>2.0 PROJECT SETTING .....</b>	<b>1</b>
2.1 Project Location .....	1
2.2 Climate.....	1
2.3 Soils.....	1
2.4 Terrain.....	1
2.5 Land Uses.....	2
2.5.1 On-Site Land Uses .....	2
2.5.2 Surrounding Land Uses.....	2
2.6 Watersheds and Hydrology .....	2
<b>3.0 METHODS .....</b>	<b>1</b>
3.1 Literature Review.....	1
3.2 Field Reconnaissance.....	2
3.2.1 Vegetation Community and Land Cover Mapping.....	3
3.2.2 Flora .....	3
3.2.3 Fauna.....	3
3.2.4 Special-Status and/or Regulated Resources.....	4
3.2.5 Survey Limitations.....	8
<b>4.0 RESULTS .....</b>	<b>1</b>
4.1 Vegetation Communities, Land Covers, and Floral Diversity.....	1
4.1.1 Diegan Coastal Sage Scrub.....	3
4.1.2 Mulefat Scrub.....	3
4.1.3 Southern Willow Scrub.....	4
4.1.4 Freshwater Marsh.....	4
4.1.5 Southern Coastal Saltmarsh .....	5
4.1.6 Open Water .....	6
4.1.7 Disturbed Land.....	6
4.1.8 Ornamental Plantings.....	6
4.1.9 Flora .....	7
4.2 Wildlife .....	7

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

**TABLE OF CONTENTS (CONTINUED)**

<b><u>Section</u></b>	<b><u>Page No.</u></b>
4.3 Special-Status/Regulated Resources .....	8
4.3.1 Special-Status Plant Species .....	8
4.3.2 Special-Status Wildlife Species .....	9
4.3.3 Critical Habitat.....	10
4.3.4 Special-Status Vegetation Communities.....	13
4.3.5 Jurisdictional Waters.....	13
4.4 Wildlife Corridors and Habitat Linkages.....	17
4.4.1 Project Area .....	19
4.4.2 Oceanside HCP/NCCP.....	19
4.4.3 Carlsbad HMP.....	19
<b>5.0 PROJECT IMPACTS .....</b>	<b>1</b>
The purpose of Section 5 is to.....	1
5.1 Definition of Impacts .....	1
5.1.1 Direct Impacts .....	1
5.1.2 Indirect Impacts .....	2
5.1.3 Cumulative Impacts .....	2
5.2 Impacts to Vegetation Communities and Land Covers .....	5
5.2.1 Direct Impacts.....	5
5.2.2 Indirect Impacts .....	6
5.3 Impacts to Special-Status Plant Species .....	8
5.4 Impacts to Special-Status Wildlife Species .....	8
5.4.1 Direct Impacts .....	8
5.4.2 Indirect Impacts .....	11
5.5 Impacts to Jurisdictional Waters.....	13
5.5.1 Direct Impacts .....	13
5.5.2 Indirect Impacts .....	14
5.6 Impacts to Wildlife Corridors and Habitat Connectivity .....	14
5.6.1 Direct Impacts .....	14
5.6.2 Indirect Impacts .....	17
5.7 Impacts to Regional Resource Planning .....	17
5.7.1 City of Carlsbad HMP .....	17
5.7.2 City of Oceanside's HCP/NCCP .....	18

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

**TABLE OF CONTENTS (CONTINUED)**

<b><u>Section</u></b>	<b><u>Page No.</u></b>
<b>6.0 SIGNIFICANT IMPACTS .....</b>	<b>1</b>
6.1 Explanation of Findings of Significance.....	1
6.2 Vegetation Communities or Land Covers.....	2
6.2.1 Significant Impacts to Vegetation Communities or Land Covers .....	2
6.2.2 Impacts to Vegetation Communities or Land Covers Determined to be Less than Significant.....	3
6.3 Special-Status Plant Species .....	3
6.4 Special-Status Wildlife Species .....	3
6.4.1 Significant Impacts to Special-Status Wildlife .....	3
6.4.2 Impacts to Special-Status Wildlife Determined to be Less than Significant .....	4
6.5 Jurisdictional Waters.....	4
6.5.1 Significant Impacts to Jurisdictional Waters .....	4
6.5.2 Impacts to Jurisdictional Waters Determined to be Less than Significant .	5
6.6 Wildlife Corridors and Habitat Connectivity.....	5
6.6.1 Significant Impacts to Wildlife Corridors and Habitat Connectivity .....	5
6.6.2 Impacts to Wildlife Corridors and Habitat Connectivity Determined to be Less than Significant.....	5
6.7 Regional Resource Planning .....	5
<b>7.0 MITIGATION.....</b>	<b>1</b>
7.1 Special-Status Vegetation Communities.....	1
7.2 Special-Status Plants .....	5
7.3 Special-Status Wildlife .....	5
7.4 Jurisdictional Waters, Including Wetlands .....	7
7.5 Habitat Linkages/Wildlife Corridors .....	9
<b>8.0 REFERENCES.....</b>	<b>1</b>

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

**TABLE OF CONTENTS (CONTINUED)**

**APPENDICES**

- A Plants Compendium
- B Wildlife Compendium
- C Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report for the Buena Vista Creek Channel Maintenance Project, Carlsbad, California
- D Results of a Focused Survey for the Light-Footed Clapper Rail at the Buena Vista Creek Channel Maintenance Project Site, Cities of Carlsbad and Oceanside, San Diego County, California 2012
- E Data Station Forms
- F Special-Status Plant Species Detected or Moderate to High Potential to Occur on the Project Site
- G Special-Status Wildlife Species Not Expected or Low Potential to Occur on the Project Site
- H Special-Status Wildlife Species Detected or Moderate to High Potential to Occur on the Project Site

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

**TABLE OF CONTENTS (CONTINUED)**

**Page No.**

**LIST OF FIGURES**

1-1	Regional Map.....	1-5
1-2	Vicinity Map .....	1-7
1-3	Regulatory Setting .....	1-11
2-1	Hydrogeologic Setting .....	2-3
4-1	Biological Resources Map .....	4-11
4-2	Jurisdictional Delineation Map .....	4-15
5-1	Biological Resources Map with Proposed Maintenance .....	5-3
5-2	Jurisdictional Delineation Map with Proposed Maintenance .....	5-15
5-3	Regulatory Setting with Proposed Maintenance .....	5-19

**LIST OF TABLES**

3-1	Schedule of Surveys.....	3-2
4-1	Vegetation Communities and Land Covers .....	4-2
4-2	Jurisdictional Wetland Delineation Summary .....	4-13
4-3	Data Station Point Summary .....	4-14
5-1	Temporary Direct Impacts to Vegetation Communities and Land Covers.....	5-5
5-2	Temporary Direct Impacts to Jurisdictional Waters, Including Wetlands.....	5-13

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

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**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

## **1.0 INTRODUCTION**

The proposed 11.2-acre Buena Vista Creek Channel Maintenance Project is located in the Cities of Carlsbad and Oceanside in northern San Diego County, California (Figure 1-1). The study area is located south of State Highway 78 (Hwy. 78), north of Marron Road and east of Jefferson Street. The study area is situated along Buena Vista Creek channel south of Hwy. 78 and immediately north of the Plaza Camino Real shopping mall (Figure 1-2). See Section 2.1 for additional detail regarding the project location.

The purpose of this biological resources report is to document the biological resources that are present or have potential to occur in the project area and are recognized by local, state, or federal resource agencies as special-status or sensitive through the following: a literature review, a formal jurisdictional of waters and wetlands, vegetation community mapping, and focused surveys for special-status plant and wildlife species, including least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), and light-footed clapper rail (*Rallus longirostris levipes*). This report also analyzes the potential direct and indirect impacts to special-status biological resources resulting from the proposed project; it analyzes the biological significance of the site with respect to regional biological resource planning documents and policies; and it discusses mitigation measures that will reduce significant biological impacts to a less-than-significant level consistent with federal, state, and local regulations, including the California Environmental Quality Act (CEQA).

### **1.1 Project Description**

The Buena Vista Creek channel was relocated to its current alignment to construct a parking lot for Plaza Camino Real in 1979. The Buena Vista Channel Maintenance District (Maintenance District) was formed in 1989 and is administered by the City of Carlsbad (City). The District boundaries include a portion of the Buena Vista Creek channel from the Jefferson Street Bridge upstream or east to the South Vista Way Bridge. The purpose of the Maintenance District is to provide an effective, consistent means of clearing the channel.

The Buena Vista Creek channel serves as a flood control channel and is riprap-sided with a natural bottom. Since the channel was completed, the north half of the channel has been dredged twice—once in 1993 and again in 1997. The resource agencies that issued permits for the dredging in 1993 and 1997 requested that the City review alternatives to dredging the channel. Further requests for the City to review alternatives to dredging the channel were made by the California Department of Fish and Wildlife (CDFW), the U.S. Army Corps of Engineers (ACOE), and the Regional Water Quality Control Board (RWQCB) in 2002.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

Since the 1997 channel dredging, continued growth of wetlands plants in the channel increased channel roughness, requiring further maintenance. The effect of increased channel roughness resulted in greater resistance to water flows that jeopardize the flood control capacity of the stream channel. The City therefore evaluated the need, frequency, and methods to maintain Buena Vista Creek channel within the Maintenance District. In 2003, the City approved a program environmental impact report (PEIR) to implement an ongoing maintenance program to reduce flooding of the Maintenance District properties. A Streambed Alteration Agreement (SAA) (No. 1600-2004-0006-R5) was issued by the CDFW on February 11, 2004. The SAA was extended on January 21, 2009, and is scheduled to terminate on December 31, 2013. The maintenance program was initiated in 2004 and is ongoing.

Since 2003, the City has conducted a maintenance program that consists of hand removal of vegetation within the northern half of the channel between the South Vista Way Bridge and the Coastal Zone boundary over a 5-year period (i.e., one-tenth of the channel each year). Permanent vertical marker posts were placed in the project area using Global Positioning System (GPS) coordinates to mark the corners of each section of the project area. Poles are replaced as necessary if they are removed or knocked down by storm events. The maintenance activities, which are carried out by a landscape contractor that specializes in habitat restoration, are performed outside of the bird breeding season and outside of the growing season to avoid/minimize the impacts on the cattails and other wetland plants being cut back. Approximately 10% of the aboveground vegetation in the project area is cut back and removed each year. The cut vegetation is hauled out of the channel and placed directly into a haul-away bin. When the bin is full, Waste Management collects the full bin and leaves an empty bin until the work is done. The project area is divided into five segments for vegetation cutting. Only the northern half of the channel is cut and the southern half is left alone, except to control invasive exotic species and to remove accessible trash. The remaining vegetation in the channel continues to act as a filter to capture nutrients and other pollutants, as well as trash and other debris. A biological monitor visits the site each workday to discuss the work, inspect work progress, and answer questions. The biological monitor submits daily reports to the City following each site visit, and annual reports to the City and the CDFW; as required by the SAA.

An Exotic Plant Species Control Plan was prepared and implemented as part of the current maintenance program. This plan identifies species-specific control measures and takes into account the type of species, size, and amount of the biomass, and/or the location of the species. Control measures include pulling plant species, treating them with herbicide, and leaving them in place to decompose, or cutting and treating them with herbicide.

A Revegetation Plan was implemented as part of the 2003 maintenance program. The Revegetation Plan was prepared to revegetate the disturbed wetland areas within the creek channel and upland areas on the riprapped northern bank. A native upland seed mix was sown between the riprap on

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

the northern bank, and native upland plants have become established in the voids where enough soil exists for plants to grow. Since completion of the initial removal of invasive exotic plant species from the creek channel, there have been no significant bare areas that would require revegetation with native species. No further habitat restoration efforts have taken place since the first year, beyond the ongoing control of invasive exotic plant species each year.

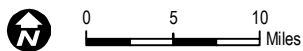
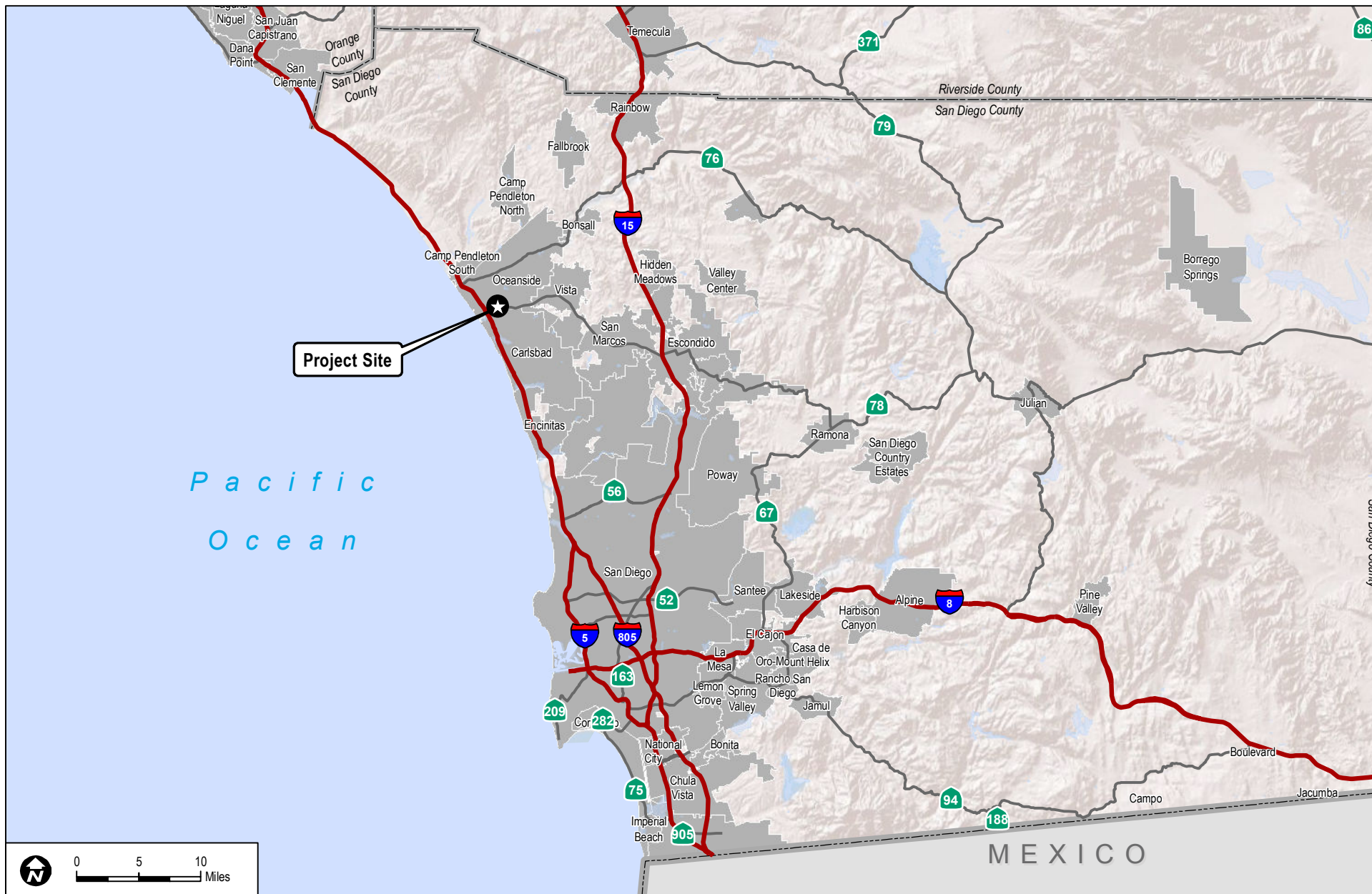
Because the SAA terminates on December 31, 2013, the City reevaluated the need, frequency, and methods to maintain Buena Vista Creek channel within the Maintenance District through preparation of additional hydraulic studies (Chang Consultants 2012). Since the initiation of the channel maintenance program in 2004, the portion of the Buena Vista Channel Maintenance Project within the California Coastal Commission (CCC) zone, which has not been maintained since the dredging in 1989, is starting to accumulate sediment, and at times, impeding the channel outlet and upstream capacity (Chang Consultants 2012).

Therefore, the proposed project includes hand removal of vegetation within the northern half of the channel between the upstream face of Jefferson Street Bridge east to the downstream face of the South Vista Way Bridge over a 5-year period (i.e., one-tenth of the channel each year). The vegetation removal will occur only in freshwater marsh and the understory of southern willow scrub; no trees, including riparian trees, will be removed during channel maintenance. Vegetation would not be removed between March 15 to September 15 to avoid impacts to most nesting birds in accordance with the Migratory Bird Treaty Act. Maintenance personnel would access the vegetation via a pontoon and would use non-mechanized equipment (such as machetes, knives, sickles, saws, hand shears, and loppers) or when necessary mechanized equipment (such as weed whackers or chainsaws). Vegetation removal would occur at the end of the growing season/beginning of the dormant season (i.e., at the onset of cold weather). Vegetation is cut at ground level or the water surface and is hauled out of the channel and disposed of appropriately. The belowground portions of the plants will remain in place and alive. No ground disturbance would occur during the removal of vegetation. An Exotic Species Control Plan will be prepared to specify the specific control method for each exotic species that could occur in the project area. The control methods generally include activities such as pulling the species or treating it with herbicides. Maintenance activities occur over a very short duration; typically maintenance activities occur over a 4-week or less period per year, and approximately two to three maintenance vehicles would be on site during maintenance. For purposes of vegetation removal, as is currently practiced, maintenance vehicles would use the existing access road that runs parallel to the northern bank of the channel. The proposed maintenance program is an ongoing 20-year channel maintenance program.

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**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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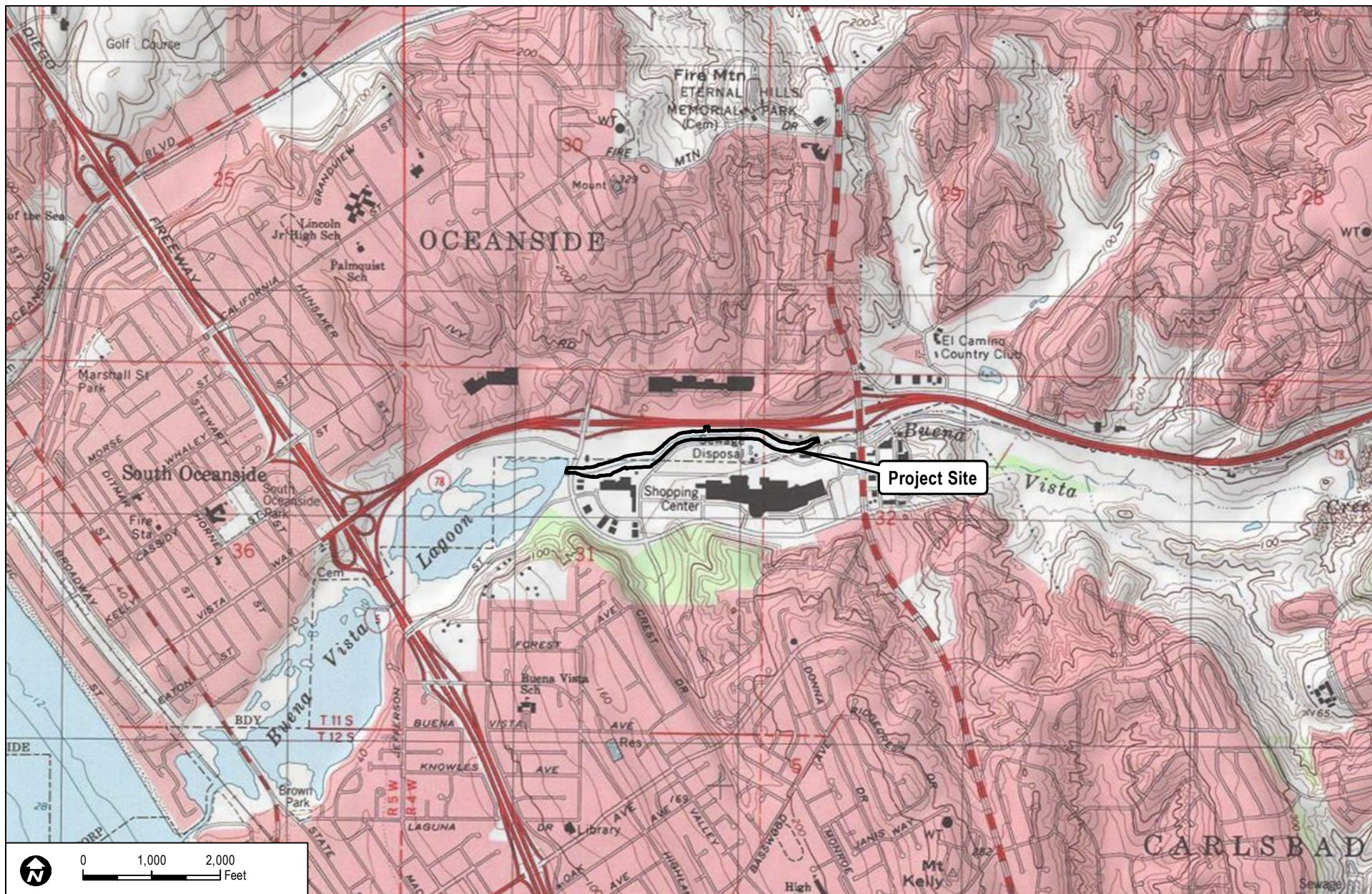
**FIGURE 1-1**  
**Regional Map**

BUENA VISTA CREEK CHANNEL MAINTENANCE PROJECT - BIOLOGICAL RESOURCES TECHNICAL REPORT

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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SOURCE: USGS 7.5-Minute Series San Luis Rey Quadrangle.

BUENA VISTA CREEK CHANNEL MAINTENANCE PROJECT - BIOLOGICAL RESOURCES TECHNICAL REPORT

**FIGURE 1-2**  
**Vicinity Map**

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

## **1.2 Regional Planning Context**

The proposed project study area is located within the North County Multiple Habitat Conservation Program (MHCP), which is a long-term regional conservation plan established to protect sensitive species and habitats in northern San Diego County. The MHCP is divided into seven subarea plans—one for each jurisdiction within the MHCP—that are permitted and implemented separately from one another. The City of Carlsbad is the only city under the MHCP that has an approved and permitted subarea plan (i.e., the City of Carlsbad Habitat Management Plan (Carlsbad HMP)). A draft City of Oceanside Habitat Conservation Plan/Natural Communities Conservation Plan (Oceanside HCP/NCCP) has been prepared and is used as a guidance document for projects in the City of Oceanside, but the subarea plan has not been approved or permitted.

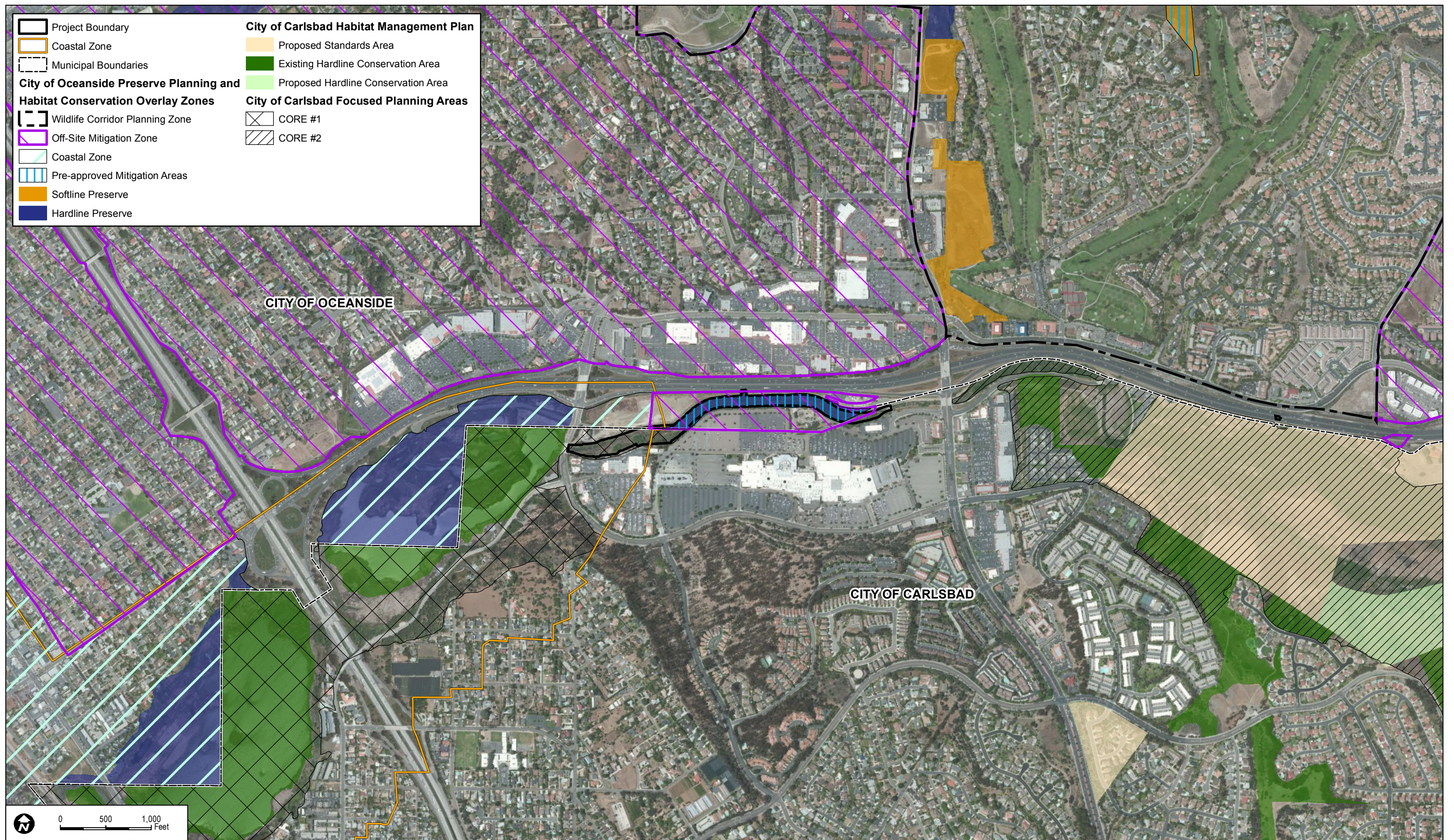
Within the City of Carlsbad, one-third of the downstream portion of the proposed project study area lies within the Focused Planning Area HMP Core Number 1. Focused Planning Area HMP Core Number 2 is upstream of El Camino Real outside of the proposed project study area (Figure 1-3). Using the Focus Planning Areas as a foundation, the HMP identified a preserve system that includes existing and proposed hardline preserve areas and standards areas. The project study area is not within an existing or proposed hardline preserve area or standards areas (Figure 1-3) and, thus, was not targeted for conservation (City of Carlsbad 2004).

Within the City of Oceanside, a portion of the channel is within a Pre-approved Mitigation Area of Off-site Mitigation Zone identified as a “hardline” preserve, as described in the Oceanside HCP/NCCP (City of Oceanside 2009). While the proposed project is not a development project, the Oceanside HCP/NCCP states that development is allowed in Pre-approved Mitigation Areas, subject to planning guidelines to avoid, minimize, and fully mitigate impacts. The Oceanside HCP/NCCP also states that at least 50% of a parcel located within a Pre-approved Mitigation Area must be conserved as biological open space, and no more than 25% impact to coastal sage scrub habitat will be allowed. Unavoidable impacts within Pre-approved Mitigation Areas may be mitigated by on-site habitat protection and management, or off-site protection within a Pre-approved Mitigation Areas or within the Wildlife Corridor Planning Zone. Because the Pre-approved Mitigation Areas are within Off-site Mitigation Zone, impacts to biological resources within this zone must be mitigated within the Wildlife Corridor Planning Zone or Pre-approved Mitigation Areas (City of Oceanside 2009).

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**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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## **2.0 PROJECT SETTING**

### **2.1 Project Location**

The proposed 11.2-acre Buena Vista Creek Channel Maintenance Project is located in the Cities of Carlsbad and Oceanside in northern San Diego County. The study area is located south of State Highway 78 (Hwy. 78), north of Marron Road and east of Jefferson Street in northern San Diego County, California (Figure 1-1). The study area is situated along Buena Vista Creek channel south of Hwy. 78 and immediately north of the Plaza Camino Real shopping mall. More specifically, the proposed project includes the portion of the Buena Vista Creek channel that lies between the upstream face of Jefferson Street Bridge east to the downstream face of the South Vista Way Bridge. The study area lies within the San Luis Rey U.S. Geological Survey (USGS) 7.5-minute quadrangle, Township 11 South, Range 4 West, Section 30 (Figure 1-2).

### **2.2 Climate**

The project site is located within the Peninsular Range approximately 1.5 miles from the Pacific Ocean. It is in a Mediterranean climate characterized by mild, dry summers and wet winters. Average temperatures near Oceanside range from approximately 44°F to 74°F, and the area generally receives an average rainfall of less than 11 inches per year (Western Regional Climate Center 2012).

### **2.3 Soils**

According to U.S. Department of Agriculture (2012), there are two soil types found in the project area: Salinas clay loam, 2–9% slopes, and tidal flats. Salinas clay loam soils are well-drained soils that are derived from alluvium from mixed sources and are composed of clay loam, clay, and loam (USDA 2012).

### **2.4 Terrain**

The property is situated between sea level and approximately 20 feet (6 meters) above mean sea level (amsl) in elevation. The site is relatively flat, with gently sloping terrain, but does not support much diversity in the topography of the land. The western portion of the site is at sea level and the topography increases in elevation to the north and the south.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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## **2.5 Land Uses**

### **2.5.1 On-Site Land Uses**

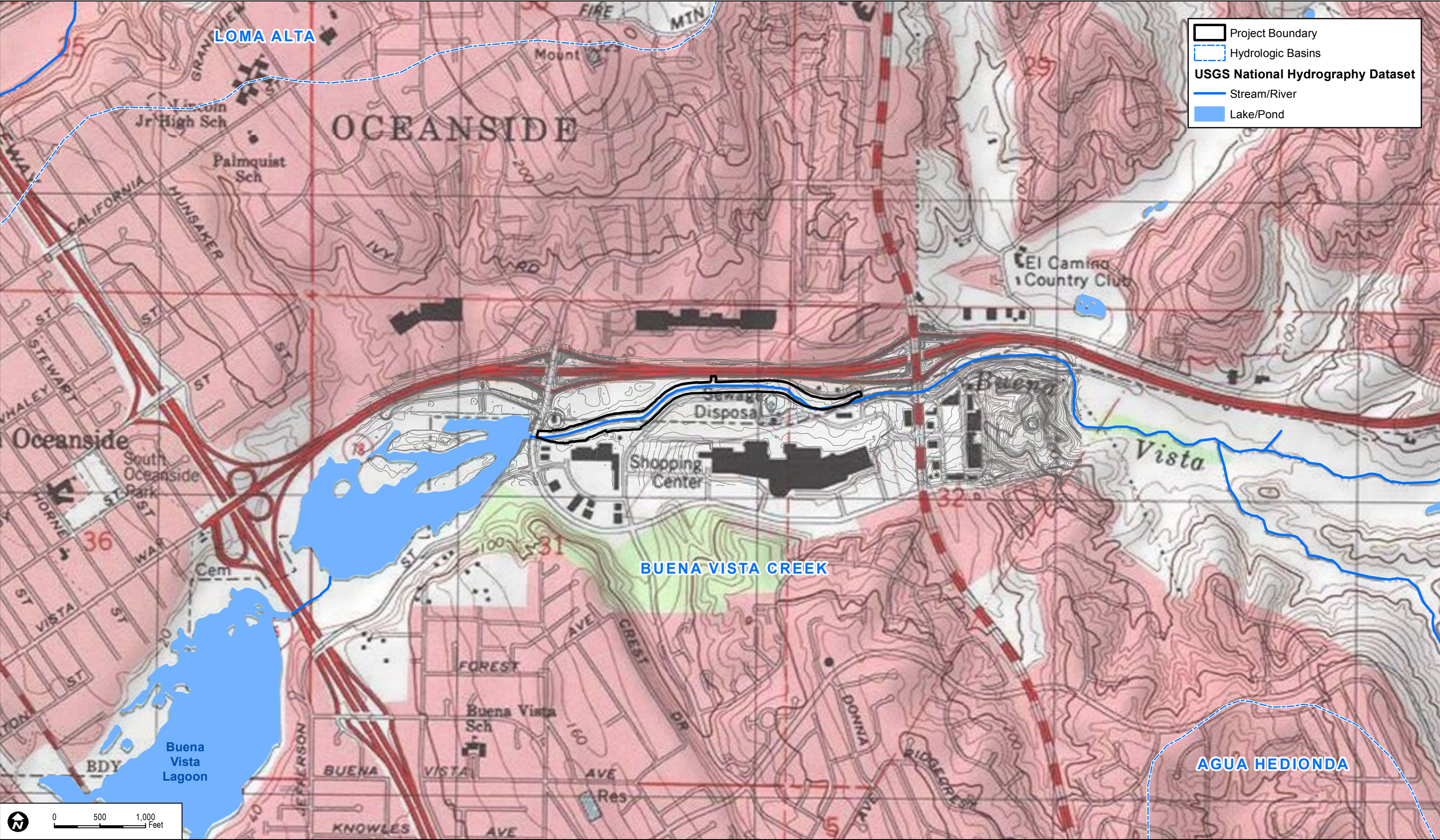
The Buena Vista Creek channel was relocated to its current alignment to construct a parking lot for Plaza Camino Real in 1979. The Buena Vista Creek channel serves as a flood control channel and is riprap-sided with a natural bottom. Since the channel was completed, the north half of the channel has been dredged twice, once in 1993 and again in 1997. In 2003, the City approved a program environmental impact report (PEIR) to implement an ongoing maintenance program to reduce the potential for flooding within the existing maintenance district boundaries. Since 2003, the City has conducted a maintenance program that consists of hand removal of vegetation within the northern half of the channel, over a 5-year period, between the South Vista Way bridge to the east and the Coastal Zone boundary to the west.

### **2.5.2 Surrounding Land Uses**

Buena Vista Creek channel occurs between the Jefferson Street Bridge to the west and El Camino Real to the east. Surrounding land uses include a vacant disturbed lot and Hwy. 78 immediately to the north, commercial developments and El Camino Real to the west, commercial developments (i.e., Plaza Camino Real shopping mall) and associated parking lots to the south, and Jefferson Street and Buena Vista Lagoon to the west.

## **2.6 Watersheds and Hydrology**

The project site is located within the Buena Vista Creek Hydrologic Area (HA) of the Carlsbad Hydrologic Unit (HU) and specifically within the El Salto Subarea Area (SA) (Figure 2-1). The Hydrologic Basin Number is 904.21. Buena Vista Creek channel flows east to west, which then flows directly into the Buena Vista Lagoon located immediately west of the project site. Buena Vista Creek channel (including Buena Vista Lagoon) flows for approximately 1.5 miles until its confluence with the Pacific Ocean. Buena Vista Creek and Buena Vista Lagoon are the major water sources in the project vicinity mapped on the USGS topographic quadrangles. The on-site portion of Buena Vista Creek channel is a perennial stream that receives water from naturally occurring runoff within the watershed.



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**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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### **3.0 METHODS**

#### **3.1 Literature Review**

Special-status biological resources present or potentially present in the project area were identified through a literature search, conducted in 2011 and 2012, and focused survey reports prepared for the project area. The following sources were used during the literature review process.

- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Geographic Information System (GIS) Data (USFWS 2011), accessed March 2011
- USFWS Critical Habitat and Occurrence Data (USFWS 2012) within 5 miles of the project area
- California Natural Diversity Database (CNDDDB) (CDFG 2012a) was queried to compile a list of potentially occurring flora and fauna in the San Luis Rey quadrangle and surrounding eight quadrangles.
- California Native Plant Society (CNPS) Inventory of Rare, Threatened and Endangered Plants of California, 8th online edition (CNPS 2012), was searched to compose a list of potentially occurring flora in the San Luis Rey quadrangle and surrounding eight quadrangles.
- San Diego Natural History Museum's (SDNHM's) San Diego County Plant Atlas (SDNHM 2012a) was queried to compile a list of potentially occurring special-status plant species in the San Luis Rey quadrangle.
- San Diego County Bird Atlas (SDNHM 2012b) was queried to compile a list of potentially occurring special-status bird species in the San Luis Rey quadrangle.
- *Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report for the Buena Vista Creek Channel Maintenance Project* (Dudek 2012)
- *Results of a Focused Survey for the Light-footed Clapper Rail at the Buena Vista Creek Channel Maintenance Project Site, Cities of Carlsbad and Oceanside, San Diego County, California, 2012* (Konecny Biological Services 2012).

The project area lies within both the City of Carlsbad and the City of Oceanside. In terms of regional preserve planning efforts, the project is within the City of Carlsbad Habitat Management Plan (HMP) (City of Carlsbad 2004) and the Oceanside Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP) (City of Oceanside 2009).

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## Buena Vista Creek Channel Maintenance Project

### Biological Resources Technical Report

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## 3.2 Field Reconnaissance

Between March 2011 and July 2012, Dudek conducted vegetation mapping, special-status plant surveys, a formal jurisdictional delineation, and focused surveys for state- and federally listed endangered least Bell's vireo (*Vireo bellii pusillus*), state- and federally listed endangered southwestern willow flycatcher (*Empidonax traillii extimus*), and state- and federally listed endangered light-footed clapper rail (*Rallus longirostris levipes*). Table 3-1 lists the dates, conditions, and survey focus for each survey.

**Table 3-1**  
**Schedule of Surveys**

Date	Hours	Personnel*	Focus	Conditions
03/21/11	0900–1645	CJF, PCS	Jurisdictional delineation and vegetation mapping	49–60°F, 0–100% cloud cover (cc), 1–3 miles per hour (mph) winds
3/30/2012	1610–1950	JK	Focused light-footed clapper rail survey	10% overcast, 65°F–61°F, 7–10 mph winds
4/8/2012	0640–1025	JK	Focused light-footed clapper rail survey	56°F–60°F, 100% overcast, 1–3 mph winds
4/19/12	0645–1015	AMH	Focused least Bell's vireo and southwestern willow flycatcher survey	53°F–61°F, overcast, 1–3 mph winds
4/22/2012	1645–2050	JK	Focused light-footed clapper rail survey	60°F–57°F, 20% overcast, 7–12 mph winds
4/30/12	0615–0930	AMH	Focused least Bell's vireo and southwestern willow flycatcher survey	58°F–63°F, overcast, 1–3 mph winds
5/2/2012	0625–1000	JK	Focused light-footed clapper rail survey	61°F–64°F, 100% overcast, 5–7 mph winds
5/9/2012	1650–2030	JK	Focused light-footed clapper rail survey	69°F–64°F, 40% overcast, 5–10 mph winds
5/15/12	0610–0905	AMH	Focused least Bell's vireo and southwestern willow flycatcher survey	57°F–63°F, 0% cc; 1–3 mph winds
5/16/2012	0610–1000	JK	Focused light-footed clapper rail survey	58°F–61°F, 100% overcast, 7–10 mph winds
05/21/12	0740–0920	KCD	Rare Plant Survey	59–63°F, 100% cc, 0–2 mph winds
5/25/12	0605–0948	AMH	Focused least Bell's vireo and southwestern willow flycatcher survey	57°F–60°F, overcast, 0–2 mph winds
6/6/12	0600–1030	AMH	Focused least Bell's vireo and southwestern willow flycatcher survey	57°F–63°F, 0% cloud cover, 1–3 mph winds
6/21/12	0630–1030	AMH	Focused least Bell's vireo and southwestern willow flycatcher survey	61°F–65°F, overcast, 0–1 mph winds
7/5/12	0620–1015	AMH	Focused least Bell's vireo and southwestern willow flycatcher survey	61°F–73°F, overcast, 0–1 mph winds
7/16/12	0600–0930	AMH	Focused least Bell's vireo and southwestern willow flycatcher survey	59°F–63°F, overcast to 0% cc, 1–3 mph winds

\* Key to Personnel:

AMH = Anita M. Hayworth

CJF = Callie J. Ford

JK = John Konecny (Konecny Biological Services)

KCD = Kathleen C. Dayton

PCS = Patricia C. Schuyler

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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### **3.2.1 Vegetation Community and Land Cover Mapping**

Vegetation communities and land uses were mapped in the field using both a Trimble GeoXT Global Positioning System (GPS) and mapping directly onto a 150-foot-scale (1 inch = 150 feet) aerial photograph-based field map of the project site. A minimum mapping unit of 0.01 acre was used for all special-status vegetation communities. Following completion of the fieldwork, all vegetation polygons were transferred to a topographic base and digitized using ArcGIS and a GIS coverage was created. Once in ArcGIS, the acreage of each vegetation community and land cover present on site was determined. Vegetation community classifications used in this report follow Holland (1986) and Oberbauer et al. (2008), where feasible, with modifications to accommodate the lack of conformity of the observed communities to those of Holland (1986) or Oberbauer et al. (2008).

Vegetation mapping was conducted in March 2011 by Dudek biologists Callie J. Ford and Patricia C. Schuyler (see Table 3-1). The jurisdictional delineation was conducted concurrently with vegetation mapping.

### **3.2.2 Flora**

Focused surveys for special-status plants were conducted on May 21, 2012, by Dudek biologist Kathleen C. Dayton. During this survey, all plant species encountered during the field surveys were identified and recorded. Scientific and common names for plant species with a California Rare Plant Rank (CRPR; formerly CNPS List) follow the California Native Plant Society Inventory of Rare, Threatened, and Endangered Plants of California (CNPS 2012). For plant species without a CRPR, scientific names follow the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2012), and common names follow the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service Plants Database (USDA 2012). A list of plant species observed on the project site during initial surveys is presented in Appendix A.

### **3.2.3 Fauna**

Focused surveys for the state- and federally listed endangered least Bell's vireo, southwestern willow flycatcher, and light-footed clapper rail were completed from April to July 2012. During these surveys, all wildlife species detected during the field surveys by sight, calls, tracks, scat, or other signs were recorded. Binoculars (7×50 power) were used to aid in the identification of observed wildlife. In addition to species actually detected, expected wildlife use of the site was determined by known habitat preferences of local species and knowledge of their relative

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

distributions in the area. Scientific and common names of animals follow Crother (2008) for reptiles and amphibians, American Ornithologists' Union (AOU) (2012) for birds, Wilson and Reeder (2005) for mammals, North American Butterfly Association (NABA) (2001) or SDNHM (2012c) for butterflies, and Moyle (2002) for fish. A cumulative list of wildlife species observed within the project site is presented in Appendix B.

### **3.2.4 Special-Status and/or Regulated Resources**

#### ***Special-Status Plant Survey***

Dudek conducted an early spring plant survey in May 2012 to maximize detection of special-status plants (Table 3-1). Focused surveys were conducted at the appropriate phenological stage of the plant (blooming and fruiting) to detect and identify the target species. Prior to field surveys, Dudek conducted a query of the CNDDDB (CDFG 2012a) and CNPS (2012) to determine which special-status species are known to occur within the project area and vicinity. Survey emphasis was placed on determining the presence, or potential for occurrence, of species found on state, federal, and CRPR 1B and 2 lists (CNPS 2012).

Field survey methods conformed to CNPS Botanical Survey Guidelines (CNPS 2001), Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFG 2009), and General Rare Plant Survey Guidelines (Cypher 2002). The survey was conducted by walking meandering transects to detect special-status species. Special-status plant observations were mapped in the field using a GPS receiver to record the location of special-status plant populations. The special-status plant observations were downloaded by Dudek GIS technician Andrew Greis, using ArcGIS software. All plant species observed in the project area were noted, and plants that could not be identified in the field were collected and identified later using a microscope with taxonomic keys.

#### ***Least Bell's Vireo Surveys***

Dudek biologist Dr. Anita Hayworth conducted focused surveys for least Bell's vireo (see Table 3-1). A Section 10(a)(1)(A) permit is not required to conduct presence/absence surveys for vireo. The eight surveys for vireo followed the currently accepted Least Bell's Vireo Survey Guidelines (USFWS 2001), which states that a minimum of eight survey visits should be made to all riparian areas and any other potential vireo habitats during the period from April 10 to July 31. The site visits are required to be conducted at least 10 days apart to maximize the detection of early and late arrivals, females, non-vocal birds, and nesting pairs. The survey method consisted of slowly walking a systematic, meandering transect within and adjacent to all suitable habitat

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

(i.e., southern willow scrub and mulefat scrub) in the project area on both north and south sides of the creek channel. This route was arranged to cover all suitable habitat on site. A vegetation map (scale 1 inch = 200 feet) of the survey area was available to record any detected least Bell's vireo. Binoculars (10×50) were used to aid in detecting and identifying wildlife species.

Taped playback of vireo vocalizations were not used during the surveys. Surveys were conducted between dawn and 1200 hours and were not conducted during periods of excessive or abnormal cold, heat, wind, rain, or other inclement weather. The focused survey report is included in Appendix C.

***Southwestern Willow Flycatcher***

Dudek biologist Dr. Anita Hayworth conducted focused surveys for southwestern willow flycatcher (see Table 3-1). Dr. Hayworth holds a federal permit, TE-781084, and state Memorandum of Understanding (MOU) to conduct surveys for the southwestern willow flycatcher. Surveys for flycatcher were conducted concurrently with the least Bell's vireo surveys. All surveys consisted of slowly walking a methodical, meandering transect within and adjacent to all riparian habitat in the study area. The perimeter also was surveyed. This route was arranged to cover all suitable habitat in the study area. A vegetation map (1 inch = 200 feet) of the study area was available to record any detected vireo or flycatcher. Binoculars (10×50) were used to aid in detecting and identifying wildlife species.

For the southwestern willow flycatcher, five surveys are required per the A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher issued by U.S. Geological Survey (USGS) and U.S. Department of the Interior and approved by the USFWS (USGS 2010). For the 2010 protocol, five survey visits are required with one visit between May 15 and May 31, two visits between June 1 and June 24, and two visits between June 25 and July 17 (USGS 2010). Each survey visit was separated by at least five days. A tape of recorded flycatcher vocalizations was used, approximately every 50–100 feet within suitable habitat, to induce flycatcher responses. To avoid harassment of the species, playback would have been halted as soon as a bird was detected. Various subspecies of this species are not easily differentiated visually or by call or song in the field, and any resident willow flycatchers observed in the final survey period were assumed to be the “southwestern” subspecies. Nonresident willow flycatchers (those not observed during the third survey period) were assumed to be migrant willow flycatchers or to not breed within the study area. The focused survey report is included in Appendix C.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

***Light-Footed Clapper Rail***

Konecny Biological Services conducted focused surveys for the light-footed clapper rail in the project area between March and May 2012. Both dawn and dusk surveys were conducted over six surveys (Konecny Biological Services 2012). The surveys were conducted in accordance with the recommendations provided to the USFWS by the Clapper Rail Study Team (2009). The surveys were conducted by walking the south side of Buena Vista Creek and stopping at stations approximately 100 feet (30 meters) apart and listening for vocalizing light-footed clapper rails. If rails were not detected passively, a digital call-prompt of the light-footed clapper rail “dueting” was played with an iPod and amplified speakers at 30-second intervals. Biologists listened for a response for approximately 10 minutes before proceeding to the next survey station. The focused survey report is included in Appendix D.

***Jurisdictional Delineation***

In March 2011, Dudek conducted a formal (routine) jurisdictional wetlands delineation within the project area. All areas identified as being potentially subject to the jurisdiction of U.S. Army Corps of Engineers (ACOE), Regional Water Quality Control Board (RWQCB), California Department of Fish and Wildlife (CDFW, and California Coastal Commission (CCC) were field-verified and mapped.

The wetlands delineation was performed in accordance with the methods prescribed in the 1987 Wetlands Delineation Manual (ACOE 1987), the 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (ACOE 2008), and the ACOE and Environmental Protection Agency (EPA) Rapanos Guidance (ACOE and EPA 2008). Pursuant to the federal Clean Water Act (CWA), ACOE and RWQCB jurisdictional areas include those supporting all three wetlands criteria described in the ACOE manual: hydric soils, hydrology, and hydrophytic vegetation. Areas regulated by the RWQCB are generally coincident with the ACOE, but can also include isolated features that have evidence of surface water inundation pursuant to the state Porter Cologne Act. These areas generally support at least one of the three ACOE wetlands indicators but are considered isolated through the lack of surface water hydrology/connectivity downstream.

The ACOE/EPA Rapanos Guidance states that the ACOE will regulate traditional navigable waters of the United States (TNW), adjacent wetlands, and relatively permanent waters (RPW) tributary to TNWs, and adjacent wetlands if there is a significant nexus from the site. CDFW-regulated wetlands were identified where a predominance of hydrophytic vegetation was associated with a stream channel or where an area supported at least one of the three wetlands

# DRAFT

## Buena Vista Creek Channel Maintenance Project

### Biological Resources Technical Report

---

indicators (i.e., hydrology, hydric soils, or hydrophytic vegetation). Wetlands under the jurisdiction of ACOE, RWQCB, or CDFW would be considered wetlands by the cities of Oceanside and Carlsbad.

To assist in the determination of jurisdictional areas on site, data was collected at four data stations (Appendix E). Hydrology, vegetation, and soils were assessed, and data were collected on approved ACOE forms. The site was evaluated for evidence of an ordinary high water mark (OHWM), surface water, saturation, wetland vegetation, and nexus to a TNW. The extent of any identified jurisdictional areas was determined by mapping the areas with similar vegetation and topography to the sampled locations. A more detailed description of the methods is described below.

The location of data stations and the limits of wetlands were collected in the field using a 150-scale (1 inch = 150 feet) aerial photograph, topographic base, and Trimble GeoXT GPS unit with sub-meter accuracy. The jurisdictional extents were digitized in GIS based on the GPS data and data collected directly onto field maps into a project-specific GIS using ArcGIS software.

#### Hydrophytic Vegetation

Seasonal changes in species composition, human land-use practices, wildfires, and other natural disturbances can adversely affect the wetlands vegetation determination. During the delineation, a data station point was considered positive for hydrophytic vegetation if it passed the basic dominance test (Indicator 1), meaning that more than 50% of the dominant species sampled were characterized as either obligate, facultative wetland, and/or facultative per the *North American Digital Flora: National Wetland Plant List* (ACOE 2012), or if it passed the prevalence index (Indicator 2), which takes into account all plant species in the community, not just dominants. The standard plot sampling technique was used to sample vegetation within a 10-foot radius for herbaceous vegetation and a 30-foot radius for trees, shrubs, and woody vines (ACOE 1987). All plant species observed during the surveys were identified and recorded (see Appendix A). Where plant identification could not be made in the field, a sample was taken and later identified in the laboratory.

#### Hydric Soils

According to the National Technical Committee for Hydric Soils, hydric soils are “soils that are formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part” (USDA 1994). Soil pits were prepared using a “sharp shooter” shovel to determine if hydric soils were present. The presence of hydric soils was determined through consultations with the ACOE 1987 Wetlands Delineation Manual

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

(ACOE 1987) as well as Field Indicators of Hydric Soils in the United States (USDA and NRCS 2010) and ACOE's Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (ACOE 2008). Munsell Soil Color Charts were used to determine soil chroma and value. Where feasible, soil pits were prepared to depths ranging from 16 to 18 inches. Dry soils were moistened to obtain the most accurate color. In general, soils from test pits were determined to be hydric if found to be of a chroma one or chroma two with mottles. Excavated soils were examined for evidence of hydric conditions, including low chroma values and mottling, vertical streaking, sulfidic odor, and high organic matter content in the upper horizon. Evidence of previous ponding or flooding was assessed, along with the slope, slope shape, existing landform characteristics, soil material/composition, and hydrophytic vegetation to determine if hydric soils were present.

### **Hydrology**

In accordance with the guidelines prescribed in ACOE's Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (ACOE 2008), wetland hydrology indicators are separated into four major groups: Group A, B, C, and D. Group A indicators are based on direct observations of surface flow, ponding, and soil saturation/groundwater. Group B indicators consist of evidence that the site has been or is currently subjected to ponding, including, but not limited to water marks, drift deposits, and sediment deposits. Group C indicators include signs of previous and/or current saturation, including oxidized rhizospheres surrounding living roots and the presence of reduced iron or sulfur, both of which are indicative of extended periods of soil saturation. Group D indicators consist of "vegetation and soil features that are indicative of current rather than historic wet conditions and include a shallow aquitard and results of the FAC-Neutral test." Each group is subdivided into primary and secondary categories based on their frequency and reliability to occur in the Arid West region. See Appendix E for the completed data station forms.

#### **3.2.5 Survey Limitations**

The vegetation mapping, jurisdictional delineation, and special-status plant surveys were conducted during the day and during the months of the year when most annuals would have been evident or identifiable. The focused special-status plant survey was conducted during the late spring season, which resulted in detection and identification of most annual and perennial plant species that occur in the area. Due to the timing of the surveys, late summer/early fall blooming annual and cryptic perennials may not have been detectable. However, no special-status species with potential to occur bloom and/or are only identifiable in the late summer/early fall.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

Surveys specifically aimed at detection of the full range of wildlife species were not conducted. However, notes were taken for incidental wildlife observations made during focused bird surveys and during vegetation mapping and special-status plant surveys to establish a general baseline of wildlife diversity within the project area. These surveys were conducted during the daytime, which usually results in few observations of mammals, many of which may be active at night. In addition, many species of reptiles and amphibians are nocturnal or cryptic in their habits and are difficult to observe using standard meandering transects.

The current survey effort provides an accurate representation of the potential for special-status species to occur in the project area. The surveys were thorough and comprehensive, and the results of the study contained herein provide a reasonable, accurate assessment of the project area.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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## **4.0 RESULTS**

### **4.1 Vegetation Communities, Land Covers, and Floral Diversity**

The native vegetation communities on site are Diegan coastal sage scrub, mulefat scrub, southern willow scrub, freshwater marsh, southern coastal saltmarsh, and open water. The non-native, vegetation communities and land cover types (non-vegetated areas) occurring within the project area are ornamental and disturbed land. These vegetation communities and land cover types are described as follows; their acreages are presented in Table 4-1; and their spatial distributions are presented on Figure 4-1.

In September 2010, the California Department of Fish and Wildlife (CDFW), formerly California Department of Fish and Game (CDFG) published the *List of Vegetation Alliances and Associations: Hierarchical List of Natural Communities with Holland Types* (CDFG 2010), which uses the scientific name of the dominant species in that alliance as the alliance name and includes a global and state rarity rank based on the NatureServe Standard Heritage Program methodology (NatureServe 2012). The conservation status of a vegetation community is designated by a number from 1 to 5, preceded by a letter reflecting the appropriate geographic scale of the assessment (G = global, N = national, and S = subnational). The numbers have the following meaning (NatureServe 2012):

- 1 = critically imperiled
- 2 = imperiled
- 3 = vulnerable to extirpation or extinction
- 4 = apparently secure
- 5 = demonstrably widespread, abundant, and secure.

For example, G1 would indicate that a vegetation community is critically imperiled across its entire range (i.e., globally). A rank of S3 would indicate the vegetation community is vulnerable and at moderate risk within a particular state or province, although it may be more secure elsewhere (NatureServe 2012). Because NatureServe ranks vegetation communities at the global level, they have few rankings at the state or province level available. However, the List of Vegetation Alliances and Associations (CDFG 2010) includes state-level rarity rankings (i.e., the subnational (S) rank) for vegetation communities. This list (CDFG 2010) is considered the authority for ranking the conservation status of vegetation communities in California.

CDFW's guidelines for determining high priority vegetation types includes considering any communities listed with a ranking of S1–S3 and ascertaining whether the specific stands of the

# DRAFT

## Buena Vista Creek Channel Maintenance Project

### Biological Resources Technical Report

---

community type within the project area are “considered as high-quality occurrences of a given community.” The consideration of stand quality includes cover of non-native invasive species, human-caused disturbance, reproductive viability, and insect or disease damage (CDFG 2012c).

In addition, the City of Carlsbad Habitat Management Plan (HMP) and the City of Oceanside Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP) require mitigation at varying ratios for many vegetation communities. Vegetation communities considered special-status are those with an “S” ranking of 1, 2, or 3 (CDFG 2010), as well as communities that require mitigation by the City of Carlsbad and City of Oceanside (City of Carlsbad 2004 and City of Oceanside 2009); these are denoted by an asterisk (\*) in Table 4-1. These communities include those listed in Habitat Groups A through F of the City of Carlsbad HMP and the City of Oceanside HCP/NCCP and are presented within Table 4-1. Additionally, some of these vegetation communities are under the jurisdiction of the U.S. Army Corps of Engineers (ACOE), CDFW, Regional Water Quality Control Board (RWQCB), and/or the California Coastal Commission (CCC), which is described in Section 4.3.5.

**Table 4-1**  
**Vegetation Communities and Land Covers**

Habitat Types/Vegetation Communities	Code <sup>1</sup>	Habitat Group	Existing Acreage <sup>2</sup>
<i>Upland Scrub</i>			
Diegan coastal sage scrub*	32500	C/D <sup>3</sup>	0.03
<i>Subtotal</i>			<i>0.03</i>
<i>Riparian/Water and Wetlands</i>			
Mulefat scrub*	63310	A	0.63
Southern willow scrub*	63320	A	4.06
Freshwater Marsh*	52400	A	5.90
Southern Coastal Saltmarsh*	52120	A	0.11
<i>Subtotal</i>			<i>10.70</i>
<i>Unvegetated Waters</i>			
Open Water*	64100	A	0.17
<i>Subtotal</i>			<i>0.17</i>
<i>Non-Natural Land Covers</i>			
Disturbed Land	11300	F	0.20
Ornamental	12000	N/A	0.03
<i>Subtotal</i>			<i>0.23</i>
<b>Total</b>			<b>11.15</b>

\* Requires mitigation by the City of Carlsbad HMP and City of Oceanside HCP/NCCP.

<sup>1</sup> Holland (1986) as modified by Oberbauer et al. (2008).

<sup>2</sup> Totals may not add due to rounding.

<sup>3</sup> Coastal sage scrub is in Habitat Group C in the City of Oceanside HCP/NCCP, and unoccupied coastal sage scrub is in Habitat Group D in the City of Carlsbad HMP.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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#### **4.1.1 Diegan Coastal Sage Scrub**

Diegan coastal sage scrub is recognized by Oberbauer et al. (2008) and is described as a native plant community composed of a variety of soft, low, drought-deciduous shrubs, characteristically dominated by aromatic species such as California sagebrush (*Artemisia californica*), flat-top buckwheat (*Eriogonum fasciculatum*), common deerweed (*Acmispon glaber* var. *glaber*), and sages (*Salvia* spp.); with scattered evergreen shrubs, including laurel sumac (*Malosma laurina*) and lemonadeberry (*Rhus integrifolia*). This community commonly occurs on xeric slopes or sites that contain very low moisture (Oberbauer et al. 2008).

On site, this community occurs in one patch located with the northwestern portion of the site composed of a narrow strip of coyote brush (*Baccharis pilularis*)-dominated coastal sage scrub (Figure 4-1).

Diegan coastal sage scrub does not fit into a specific alliance in the List of Vegetation Alliances and Associations (CDFG 2010), but the species that dominates this community (coyote brush) has an alliance this list. Coyote brush scrub alliance has a rank of G5S5, meaning it is globally secure and secure in the state. Diegan coastal sage scrub is within Habitat Group D of the City of Carlsbad HMP and Habitat Group C of the City of Oceanside HCP/NCCP, is considered a special-status vegetation community, and requires mitigation for impacts to this vegetation community.

#### **4.1.2 Mulefat Scrub**

Mulefat scrub is recognized by Oberbauer et al. (2008) and is described as a successional herbaceous riparian plant community dominated by mulefat (*Baccharis salicifolia* ssp. *salicifolia*) and may also contain various willows (*Salix* spp.), stinging nettle (*Urtica dioica* ssp. *holosericea*), and Santa Barbara sedge (*Carex barbarae*) at low percent covers. This community is commonly found along intermittent stream channels, canyons, and catchment basins.

On site, this community is dominated by monotypic stands of mulefat and occurs in isolated patches along the northern and southern boundaries of the site (Figure 4-1).

The *Baccharis salicifolia* alliance has a rank of G5S4 in the List of Vegetation Alliances and Associations (CDFG 2010), meaning it is globally secure and apparently secure in the state. Mulefat scrub is within the Habitat Group A of the City of Carlsbad HMP and City of Oceanside HCP/NCCP, is considered a special-status vegetation community, and mitigation is required for impacts to this vegetation community.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

#### **4.1.3 Southern Willow Scrub**

Southern willow scrub is recognized by Oberbauer et al. (2008) and is described as a relatively dense broad-leaved, deciduous riparian thicket dominated by several willow species (*Salix gooddingii*, *S. lasiolepis*, *S. laevigata*, *S. lasiandra*). Emergent trees such as Fremont's cottonwood (*Populus fremontii* ssp. *fremontii*) and California sycamore (*Platanus racemosa*) may also be present at a low cover, and due to the dense shrub canopy cover, the understory is sparse. This community is commonly found along intermittent stream channels and creeks that contain loose, sandy, or fine gravelly alluvial soils (Holland 1986).

On site, this community predominately occurs within the central and upstream portions of the site (Figure 4-1). Southern willow scrub on site is the co-dominant by narrowleaf willow (*Salix exigua*), Goodding's willow (*Salix gooddingii*), and arroyo willow (*Salix lasiolepis*). The understory is sparse, and no emergent trees are present.

Southern willow scrub does not fit into a specific alliance in the List of Vegetation Alliances and Associations (CDFG 2010), but the willow species that comprise the southern willow scrub (narrowleaf willow, Goodding's willow, and arroyo willow) have alliances in this list. Narrowleaf willow alliance has a rank of G5S4, meaning it is globally secure and apparently secure in the state. Goodding's willow has a rank of G4S3, meaning it is apparently secure globally and is vulnerable to extirpation or extinction in the state. Arroyo willow has a rank of G4S4, meaning that it is apparently secure both globally and within the state. Southern willow scrub is within Habitat Group A of the City of Carlsbad HMP and City of Oceanside HCP/NCCP, is considered a special-status vegetation community, and requires mitigation for impacts to this vegetation community.

#### **4.1.4 Freshwater Marsh**

Freshwater marsh typically forms a completely closed canopy that is dominated by emergent perennial species and can reach up to 4–5 meters (13–16 feet) in height (Oberbauer et al. 2008). Species such as cattail (*Typha* spp.), woolly sedge (*Carex lanuginosa*), yellow nutsedge (*Cyperus esculentus*), and bulrush (*Schoenoplectus* spp.) commonly dominate the community. Freshwater marsh occurs in areas that are permanently flooded by fresh water including the slow-moving streams, ditches, and along the margins of lakes and contain an accumulation of deep, peaty soils.

Freshwater marsh is predominantly found in the downstream portion of the site where it receives flows from Buena Vista Lagoon to the west. Small patches also occur within the central and eastern portion of the site. On site, species found in the community include broadleaf cattail (*Typha latifolia*), chairmaker's bulrush (*Schoenoplectus americanus*), and Pacific swampfire (*Salicornia pacifica*).

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

Freshwater marsh does not fit into a specific alliance in the List of Vegetation Alliances and Associations (CDFG 2010), but the species that comprise this community on site (broadleaf cattail, chairmaker's bulrush, and Pacific swampfire) have alliances in this list. Broadleaf cattail alliance has a rank of G5S5, meaning it is globally secure and secure in the state. Chairmaker's bulrush has a rank of G5S3, meaning it is secure globally and is vulnerable to extirpation or extinction in the state. Pacific swampfire has a rank of G4S3, meaning it is apparently secure globally and is vulnerable to extirpation or extinction in the state. Coastal and valley freshwater marsh is within Habitat Group A of the City of Carlsbad HMP and City of Oceanside HCP/NCCP, is considered a special-status vegetation community, and requires mitigation for impacts to this vegetation community.

#### **4.1.5 Southern Coastal Saltmarsh**

Holland (1986) defines southern coastal saltmarsh as a moderate-to-dense canopy that reaches 1 meter (3 feet) tall and is composed of a salt-tolerant herbaceous and subshrub layer (Holland 1986). Southern coastal saltmarsh is very similar to northern coastal saltmarsh; however, it differs in that it is characterized by warmer water and air temperatures. The upper, landward edges of the marshes are typically composed of *Frankenia* (*Frankenia* spp.), sea-blite or seepweed (*Suaeda* spp.), and/or pickleweed (*Salicornia subterminalis*), while Bigelow's pickleweed (*S. bigelovii*), Virginia pickleweed (*S. virginica*), and saltwort (*Batis maritima*) occur at middle elevations and cord grass (*Spartina* spp.) can be found closest to open water. Other species associated with southern coastal saltmarsh include Watson's saltbush (*Atriplex watsonii*), California box-thorn (*Lycium californicum*), and shoregrass (*Monanthochloe littoralis*). Southern coastal saltmarsh occurs at bays, lagoons, and estuaries along the coast (Holland 1986).

Southern coastal saltmarsh is predominantly found in the downstream portion of the site where it receives flows from Buena Vista Lagoon to the west. It occurs along the northern boundary of the site and includes Pacific swampfire, salt grass (*Distichlis spicata*), and black mustard (*Brassica nigra*).

Southern coastal saltmarsh does not fit into a specific alliance in the List of Vegetation Alliances and Associations (CDFG 2010), but the species that comprise this community on site (Pacific swampfire) have alliances in this list. Pacific swampfire has a rank of G4S3, meaning it is apparently secure globally and is vulnerable to extirpation or extinction in the state. Southern coastal saltmarsh is within Habitat Group A of the City of Carlsbad HMP and City of Oceanside HCP/NCCP, is considered a special-status vegetation community, and requires mitigation for impacts to this vegetation community.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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#### **4.1.6 Open Water**

Open water is not recognized by Holland (1986), but is described in Oberbauer et al. (2008). Open water consists of bodies of fresh water (extremely low salinity) in the form of lakes, streams, ponds, or rivers (Oberbauer et al. 2008). Open water areas are aquatic areas that generally lack emergent vegetation, but typically support hydrophytic vegetation around their margins (e.g., mulefat scrub, southern willow scrub, freshwater marsh, or herbaceous wetland).

The open water area occurs in the downstream portion of the site. This area receives overflow from the Buena Vista Lagoon directly to the west.

Open water is not a vegetation community; therefore, it is not included in the List of Vegetation Alliances and Associations (CDFG 2010). Open water is within Habitat Group A of the City of Carlsbad HMP and City of Oceanside HCP/NCCP, is considered a special-status vegetation community, and requires mitigation for impacts to this vegetation community.

#### **4.1.7 Disturbed Land**

Disturbed land refers to areas that have been permanently altered by previous human activity that has eliminated all future biological value of the land for most species. The native or naturalized vegetation is no longer present, and the land lacks habitat value for sensitive wildlife, including potential raptor foraging.

Disturbed land occurs within the north side of the downstream portion of the creek and consists of ruderal vegetation and ornamental species growing within the riprap.

Disturbed land is not included in the List of Vegetation Alliances and Associations (CDFG 2010). Disturbed land is within Habitat Group F of the City of Carlsbad HMP and City of Oceanside HCP/NCCP. This community is not considered a special-status vegetation community; however, impacts to this land cover may be subject to a Habitat Mitigation Fee.

#### **4.1.8 Ornamental Plantings**

Not described by Holland (1986) and included within disturbed land (11300) in Oberbauer et al. (2008), ornamental plantings refer to areas where non-native ornamentals and landscaping have been installed. Ornamental plantings are not regulated by the environmental resource agencies and do not require mitigation. Other agencies such as Caltrans, or local governments, may require that disturbed or damaged ornamental plantings be replaced to restore aesthetics or function such as screening or erosion control.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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Ornamental plantings occur in one patch located at the south central portion of the site. These plantings are associated with the landscaping for the Plaza Camino Real and North County Plaza shopping center.

Disturbed land is not included in the List of Vegetation Alliances and Associations (CDFG 2010). Since it is dominated by non-native vegetation ornamental plantings, ornamental is not included in any of the Habitat Groups described in the City of Carlsbad HMP and City of Oceanside HCP/NCCP, indicating that it has limited habitat value.

#### **4.1.9 Flora**

A total of 37 vascular plant species, consisting of 19 native species (51%), and 18 non-native species (49%), were recorded on site during initial surveys (Appendix A).

#### **4.2 Wildlife**

The project area supports habitat for common riparian species. Wetland features within the project area provide habitat for riparian bird species, amphibians, and invertebrate species.

A list of the wildlife species observed within the project area during focused bird surveys, vegetation mapping, and rare plant surveys is provided in Appendix B. There were 76 wildlife species observed on the project site.

Two reptile species were observed within and adjacent to the project area during 2011/2012 surveys: side-blotched lizard (*Uta stansburiana*) and western fence lizard (*Sceloporus occidentalis*). No amphibian species were documented within the project area during 2011/2012 surveys, but common amphibian species that could occur on site include tree frogs (*Pseudacris* spp.) and western toad (*Anaxyrus boreas*). Common reptile species that likely occur in the project area include common garter snake (*Thamnophis sirtalis*) and pond slider (*Trachemys scripta*).

Sixty-four bird species were detected during the biological surveys. Common species observed within the project area include mourning dove (*Zenaida macroura*), house finch (*Carpodacus mexicanus*), song sparrow (*Melospiza melodia*), Anna's hummingbird (*Calypte anna*), common yellowthroat (*Geothlypis trichas*), and black phoebe (*Sayornis nigricans*).

Three mammal species were detected (directly or indirectly) within the project area during biological surveys, including coyote (*Canis latrans*), California ground squirrel (*Spermophilus beecheyi*), and long-tailed weasel (*Mustela frenata*). Bats occur throughout most of Southern California and may use any portion of the project area as foraging habitat.

Seven invertebrates were observed on the project site, including western tiger swallowtail (*Papilio rutulus*), orange sulphur (*Colias eurytheme*), and mourning cloak (*Nymphalis antiopa*).

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

No fish species were documented in the project area during 2011/2012 surveys.

Special-status wildlife species are further addressed in Section 4.3.2.

### **4.3 Special-Status/Regulated Resources**

Endangered, rare, or threatened species, as defined in California Environmental Quality Act (CEQA) Guideline 15380(b) (14 CCR 15000 et seq.), are referred to as “special-status species” in this report and include (1) endangered or threatened species recognized in the context of the California Endangered Species Act (CESA) and the federal Endangered Species Act (ESA); (2) plant species with a California Rare Plant Rank (CRPR) (CDFG 2012b; CNPS 2012) (Lists 1 through 4); (3) California Species of Special Concern (SSC) and Watch List (WL) species, as designated by the CDFG (2011); (4) mammals and birds that are fully protected (FP) species, as described in Fish and Game Code, Sections 4700 and 3511; (5) Birds of Conservation Concern (BCC), as designated by the U.S. Fish and Wildlife Service (USFWS 2008); and (6) plant and wildlife species that are “covered” under the Carlsbad HMP (List 1 and List 2, City of Carlsbad 2004) and/or the Oceanside HCP/NCCP (Table 3-4, City of Oceanside 2009).

#### **4.3.1 Special-Status Plant Species**

Special-status plant surveys were conducted to determine the presence or absence of plant species that are considered endangered, rare, or threatened under CEQA Guideline 15380 (14 CCR 15000 et seq.). No special-status plant species were identified during the focused survey conducted in May 2012.

Appendix F lists the special-status plant species reported in the U.S. Geological Survey 7.5-minute San Luis Rey quadrangle, the surrounding eight topographic quadrangles (CNPS and CNDDB occurrences), recorded in the San Luis Rey quadrangle from the San Diego County Plant Atlas (SDNHM 2012a), and plant species “covered” under the Carlsbad HMP (List 1 and List 2, City of Carlsbad 2004) and/or the Oceanside HCP/NCCP (Table 3-4, City of Oceanside 2009). This appendix also analyzes each of these special-status species’ occurrence or potential to occur based on known range, habitat associations, preferred soil substrate, life form, elevation, and blooming period. There are no special-status plant species with a moderate or high potential to occur within the project study area. Appendix F includes the special-status plant species that are either not expected to occur or have a low potential to occur; these species are not further analyzed in this biological resources technical report (BTR) because no direct, indirect, or cumulative impacts are expected.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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#### **4.3.2 Special-Status Wildlife Species**

Five special-status wildlife species were observed during wildlife surveys: least Bell's vireo (*Vireo bellii pusillus*), a federally and state-listed endangered species, BCC species, and "covered" species by the Carlsbad HMP and Oceanside HCP/NCCP; yellow warbler (*Setophaga petechia*), a BCC and SSC species; Clark's marsh wren (*Cistothorus palustris clarkae*), an SSC species; Allen's hummingbird (*Selasphorus sasin*), a BCC species; and Nuttall's woodpecker (*Picoides nuttallii*), a BCC species. Additionally, it is important to note that light-footed clapper rail (*Rallus longirostris levipes*) and southwestern willow flycatcher (*Empidonax traillii extimus*) were not observed during focused surveys (see Appendix C, which includes Konecny Biological Services 2012 and Dudek 2012). These species are described in more detail below.

Appendices G and H list occurrences of special-status wildlife species reported in the USGS 7.5-minute San Luis Rey quadrangle and the surrounding eight topographic quadrangles resulting from a California Natural Diversity Database (CNDDB) search (CDFG 2012a) and records found in the San Diego Bird Atlas (SDNHM 2012b), as well as special-status species "covered" under the Carlsbad HMP (List 1 and List 2, City of Carlsbad 2004) and/or the Oceanside Subarea Plan (Table 3-4, City of Oceanside 2009). These appendices also analyze each of these special-status species' occurrence or potential to occur based on known range, habitat associations, and elevation. Appendix G includes the special-status wildlife species that are either not expected to occur or have a low potential to occur; these species are not further analyzed in this BTR because no direct, indirect, or cumulative impacts are expected. Appendix H includes the special-status wildlife species observed or with a moderate or high potential to occur within the project study area and are further analyzed in this BTR.

##### **Least Bell's Vireo**

Least Bell's vireo is a federally and state-listed endangered species, a BCC species, and is "covered" under both the Carlsbad HMP and the Oceanside HCP/NCCP. The least Bell's vireo is one of four subspecies of the Bell's vireo; its breeding range includes coastal and inland Southern California (including the western edge of Southern California's southern deserts), a small area within California's Central Valley, and extreme northern Baja California, Mexico. Although the winter range of all subspecies of Bell's vireo is not well known, it generally appears to winter from southern Baja and southern Sonora, Mexico, south along the west coast of Mexico and Central America to Honduras and casually to northern Nicaragua. It is also reported from the eastern coast of Central America from Veracruz south to Honduras (County of Riverside 2008). Least Bell's vireos primarily occupy riverine riparian habitats along water, including dry portions of intermittent streams that typically provide dense cover within 1 to 2

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

meters (3.3 to 6.6 feet) of the ground, often adjacent to a complex, stratified canopy. Least Bell's vireo nesting habitats in cismontane and coastal areas include southern willow scrub, mulefat scrub, arroyo willow riparian forest edge, wild blackberry thickets, and, more rarely, cottonwood forest, sycamore alluvial woodland, and southern coast live oak riparian forest.

Focused surveys for least Bell's vireo were conducted in 2012. There are approximately 4.7 acres of suitable habitat for least Bell's vireo in the project area (southern willow scrub and mulefat scrub). Least Bell's vireo was documented during all survey visits. In total during all surveys, one pair and one male were mapped in southern willow scrub-dominated vegetation along the Buena Vista Creek channel on site (Figure 4-1). The pair of vireos was observed in the easternmost portion of the creek channel. The pair was observed foraging with a juvenile. One juvenile was confirmed; however, others could have been present and not detected due to the density of vegetation. The single male was observed during most surveys. He was never observed with a female. He was observed within a willow patch that is both on and off site (Figure 4-1). Another pair was observed during the May 15 survey only.

#### **Other Riparian Bird Species**

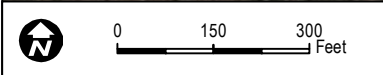
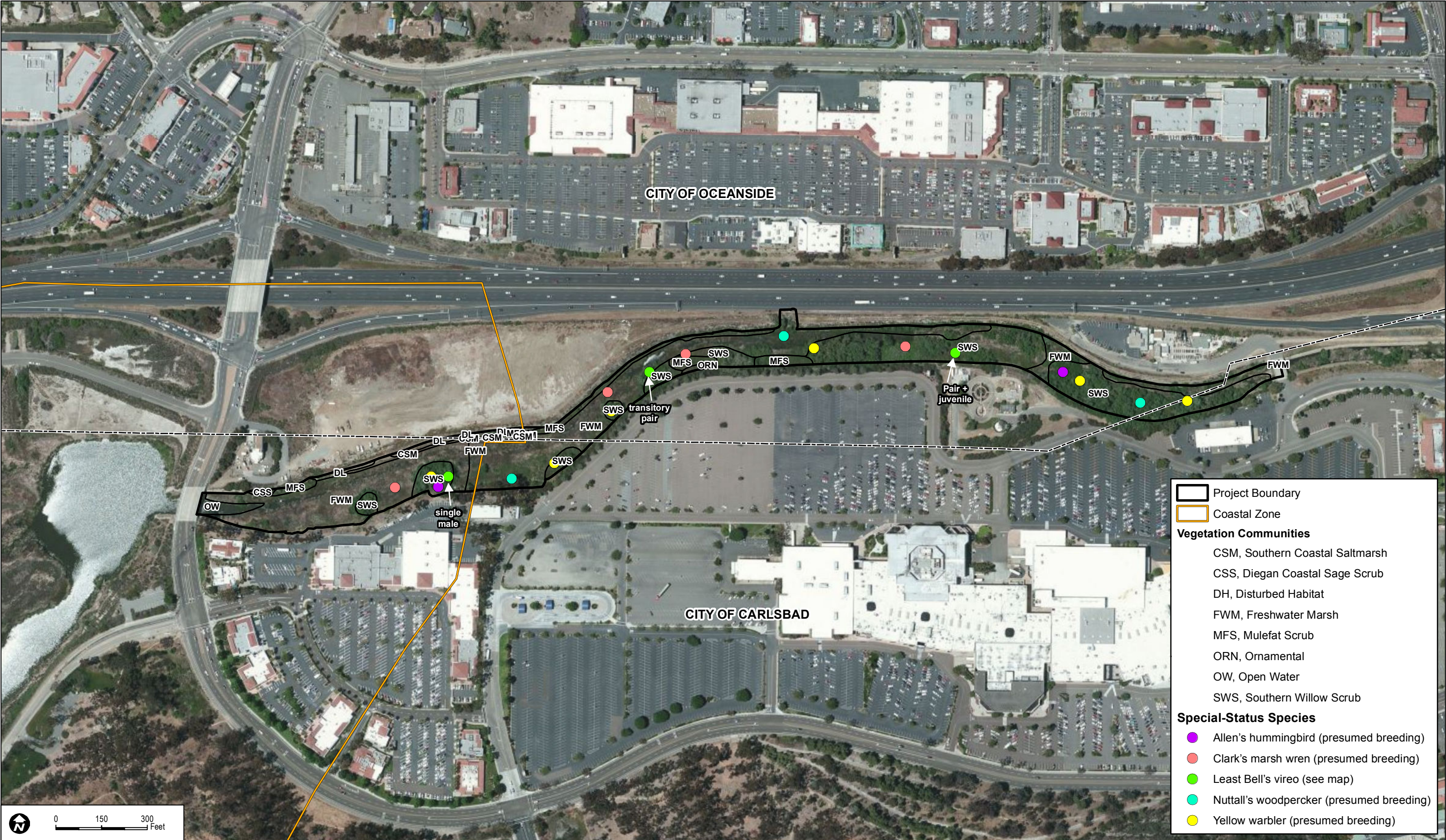
Yellow warbler is a BCC and SSC species. It is not included in the "covered" species under either the Carlsbad HMP or the Oceanside HCP/NCCP. Six yellow warblers were observed during the least Bell's vireo/southwestern willow flycatcher surveys (Figure 4-1). These birds are likely nesting in the project area.

Clark's marsh wren is an SSC species. It is not included in the "covered" species under either the Carlsbad HMP or the Oceanside HCP/NCCP. Four wrens were observed during the least Bell's vireo/southwestern willow flycatcher surveys (Figure 4-1). These birds are likely nesting in the project area.

Allen's hummingbird and Nuttall's woodpecker are BCC species; they are not included in the "covered" species under either the Carlsbad HMP or the Oceanside HCP/NCCP. Nuttall's woodpecker could nest in cavities of the larger trees. Allen's hummingbirds were observed throughout the surveys and are likely nesting in or near the project area (Figure 4-1).

#### **4.3.3 Critical Habitat**

There is no USFWS-designated critical habitat within the project area. There is critical habitat for coastal California gnatcatcher (*Poliophtila californica californica*) approximately 0.25 mile east of the project area (USFWS 2012).



- Project Boundary**  
Project Boundary
- Coastal Zone**  
Coastal Zone
- Vegetation Communities**
- CSM, Southern Coastal Saltmarsh
  - CSS, Diegan Coastal Sage Scrub
  - DH, Disturbed Habitat
  - FWM, Freshwater Marsh
  - MFS, Mulefat Scrub
  - ORN, Ornamental
  - OW, Open Water
  - SWS, Southern Willow Scrub
- Special-Status Species**
- Allen's hummingbird (presumed breeding)
  - Clark's marsh wren (presumed breeding)
  - Least Bell's vireo (see map)
  - Nuttall's woodpercker (presumed breeding)
  - Yellow warbler (presumed breeding)

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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## Buena Vista Creek Channel Maintenance Project

### Biological Resources Technical Report

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#### 4.3.4 Special-Status Vegetation Communities

Special-status vegetation communities are those that are considered a sensitive natural community (CDFG 2010) and/or that require mitigation, and thus considered sensitive, pursuant to the Carlsbad HMP and/or the Oceanside HCP/NCCP. Vegetation communities that occur on site that are considered sensitive include Diegan coastal sage scrub, freshwater marsh, southern coastal salt marsh, southern willow scrub, mulefat scrub, and open water.

#### 4.3.5 Jurisdictional Waters

The results of the 2011 jurisdictional delineation, performed by Dudek, concluded there are approximately 10.87 acres of jurisdictional wetlands and waters within the project site. This is comprised of approximately 7.38 acres of ACOE, RWQCB, and CDFW jurisdictional waters; approximately 3.11 acres of ACOE, RWQCB, CDFW, and CCC jurisdictional waters; 0.29 acre of wetlands under the jurisdiction of CDFW only was also mapped; and approximately 0.09 acre of wetlands under the jurisdiction of CDFW and CCC were mapped (see Table 4-2, Jurisdictional Wetland Delineation Summary).

**Table 4-2**  
**Jurisdictional Wetland Delineation Summary**

Jurisdiction	Vegetation Community	Acreage
ACOE, RWQCB, CDFW Wetlands	Freshwater marsh	3.43
	Mulefat scrub	0.25
	Southern willow scrub	3.70
	Southern coastal saltmarsh	less than 0.01
<i>ACOE, RWQCB, CDFW Subtotal</i>		7.38
ACOE, RWQCB, CDFW, CCC Wetlands	Freshwater marsh	2.47
	Southern willow scrub	0.36
	Southern coastal saltmarsh	0.11
	Open water	0.17
<i>ACOE, RWQCB, CDFW, CCC Subtotal</i>		3.11
CDFW Only Wetlands	Mulefat Scrub	0.29
<i>CDFW Subtotal</i>		0.29
CDFW, CCC Wetlands	Mulefat Scrub	0.09
<i>CDFW, CCC Subtotal</i>		0.09
<b>Grand Total</b>		<b>10.87</b>

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

Figure 4-2 shows the distribution of jurisdictional wetlands in the study area. The waters and wetlands on the site are associated exclusively within the Buena Vista Creek channel along the project site. Buena Vista Creek flows east to west towards Buena Vista Lagoon and the Pacific Ocean which is approximately 1.5 miles west.

Buena Vista Creek channel displayed an ordinary high water mark (OHWM), saturation, permanence of surface water, and wetland vegetation. The banks of Buena Vista Creek are steeply sloped and wetlands are confined to the channel bottom. The upstream sections of the Buena Vista Creek channel are subject to permitted and ongoing creek maintenance activities conducted by the City of Carlsbad, where reaches of the channel are cleared of wetland vegetation to maintain sufficient flows and to reduce flood risk.

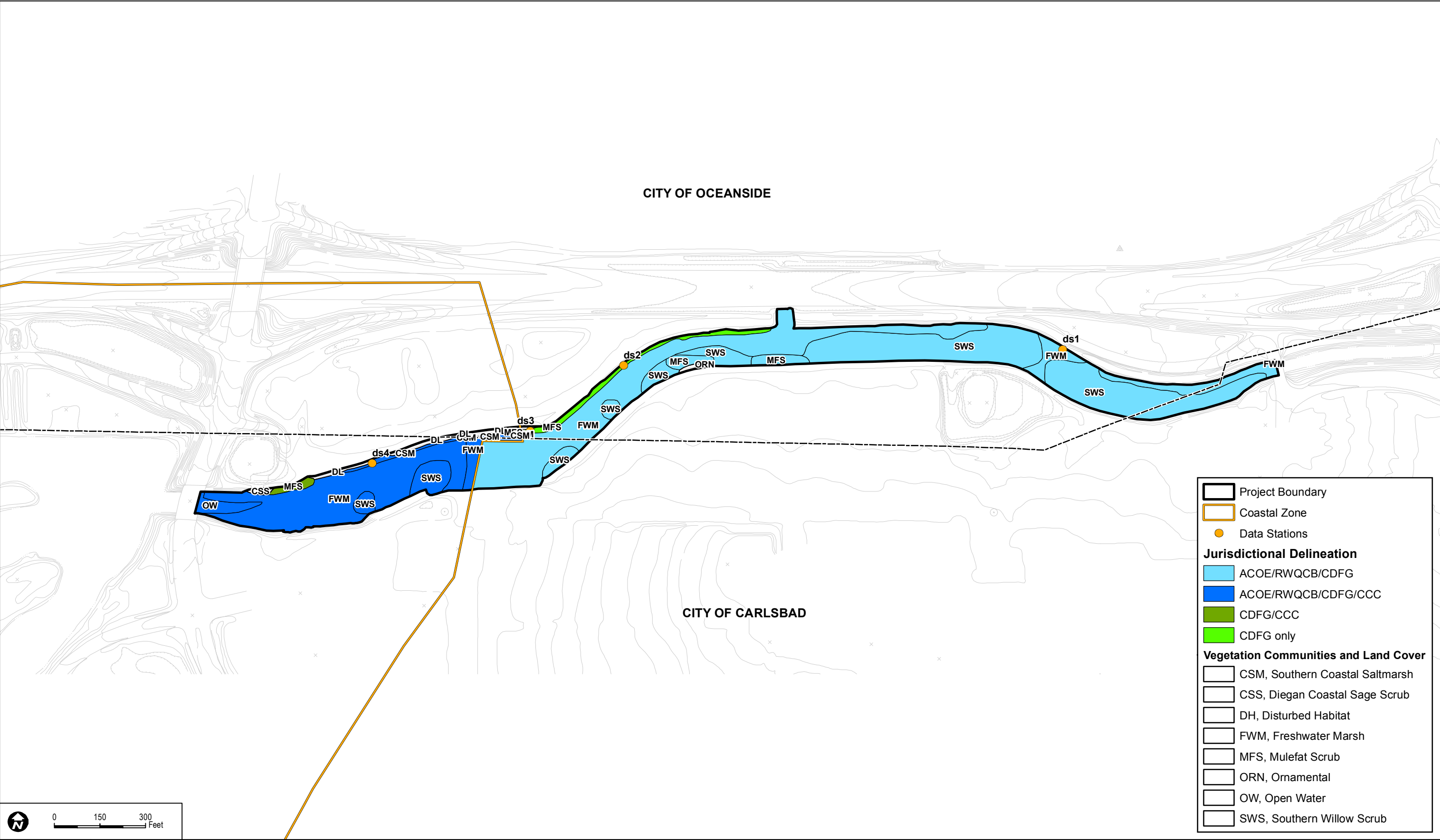
As described above in Section 3.2, hydrology, vegetation, and soils were assessed at four data station locations (see Figure 4-2) along the northern edge of the Buena Vista Creek channel to determine the presence or absence of wetlands field indicators. Two soil mapping units were recorded within the project area; however, only one soil mapping unit is listed on the National Hydric Soils List for the San Diego County Area, California (USDA and NRCS 2012): tidal flats.

Results of the four data stations (Table 4-3) document that the project area is characterized by a variety of soil textures (i.e., clay, clay loam, sand, sandy loam, and sand), and one data station was found to exhibit all three field indicators. The data collected at each data station are included in Appendix E, on the ACOE's Wetland Determination Data Forms for the Arid West Region.

**Table 4-3**  
**Data Station Point Summary**

Data Station	Wetland Determination Field Indicators			Stream Association	Determination	Jurisdiction
	<i>Vegetation</i>	<i>Hydric Soils</i>	<i>Hydrology</i>			
1	✓	✓ <sup>1</sup>	✓	Yes	Wetland	ACOE/RWQCB/CDFW
2	✓	None	None	Yes	Wetland	CDFW
3	✓	None	None	Yes	Wetland	CDFW
4	✓	✓ <sup>1</sup>	✓	Yes	Wetland	ACOE/RWQCB/CDFW/CCC

<sup>1</sup> Riprap was present at 4 inches, and hydric soils could not be determined.



**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

Data station 1 is located below the OHWM. These areas contained evidence of wetland hydrology including drift deposits and water-stained leaves and contained hydrophytic vegetation dominated by cuman ragweed (*Ambrosia psilostachya*), hooker's evening primrose (*Oenothera elata* ssp. *hirsutissima*), and arroyo willow. Riprap was present at 4 inches deep, but hydric soils were assumed because flooding likely occurs within this area for a long duration during the growing season. The hydrophytic vegetation did not pass the dominance test or prevalence index criteria; however, based on the presence of hydric soils and hydrology, and because other sampling points downstream tested positive for hydrophytic vegetation, this area was mapped as a wetland under the jurisdiction of ACOE, RWQCB, and CDFW.

Data station 2 lacks hydric soils and hydrology, but has hydrophytic vegetation present. Due to the lack of hydrology and hydric soils, this data point is not within an ACOE/RWQCB wetlands or a water of the United States. This data station is located within mapped riparian vegetation (i.e., mulefat) and is considered a CDFW wetland.

Data station 3 was located above the OHWM in the mulefat scrub on site, with Douglas's sagewort (*Artemisia douglasiana*) present. Due to the lack of hydrology and hydric soils, this data point is not within an ACOE/RWQCB wetlands or a water of the United States. This data station is located within mulefat scrub and is considered a CDFW wetland.

The soils data collected at wetlands data station 4 indicates that, in this area, the soils are hydric because there was evidence of a depleted matrix. The hydrology data collected at wetlands data station 4 indicated that there is wetlands hydrology present with indicators that included drift deposits and water-stained leaves. Dominance of Pacific swampfire (*Salicornia pacifica*) at wetlands data station 4 indicates the presence of hydrophytic vegetation. Due to the presence of all three indicators, this data point is within a wetland under the jurisdiction of ACOE, RWQCB, and CDFW. This point is also located within the coastal zone and is considered a wetland under the CCC.

#### **4.4 Wildlife Corridors and Habitat Linkages**

Wildlife corridors and habitat linkages can be described at three levels of function: (1) wildlife landscape habitat linkages; (2) wildlife corridors; and (3) wildlife crossings.

**Wildlife Landscape Habitat Linkages.** Landscape habitat linkages (or simply linkages) are relatively large open space areas that contain natural habitat and provide a connection between at least two larger adjacent open spaces that can provide for both diffusion and dispersal of many species. Linkages can form contiguous tracts of habitat when adjacent to other open space areas. Large open space networks can be formed in this way to connect and conserve habitat through entire regions (Bennett 2003).

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

Linkages can form large tracts of natural open space, serving both as “live-in” or “resident” habitat and as connections to the larger landscape (e.g., large core habitat areas). Linkages are capable of sustaining certain communities of species in self-contained, functioning ecosystems, thus supporting both plant and animal populations and allowing for gene flow through diffusion of populations over a period of generations, as well as allowing for jump dispersal between neighboring habitats. Linkages may vary in their function depending on the species, serving more as landscape-scale dispersal corridors than habitat for larger or more vagile species, particularly those with large home ranges such as mountain lions. Linkages are, nonetheless, capable of supporting at least a portion of the populations of these larger or more vagile species. Linkages may also serve as migratory routes for ungulates, for example, and thus provide a more natural and sustainable landscape environment for large predators and their prey compared to wildlife corridors through which species are expected to move quickly.

As used here, linkages are defined as large, open space areas that are large enough to support at least a natural habitat mosaic and viable populations of smaller terrestrial species, such as rodents, smaller carnivores (raccoons, skunks, foxes, and weasels), passerine birds, amphibians, reptiles, and invertebrates.

**Wildlife Corridors.** Rosenberg et al. (1995) distinguish between habitat and wildlife corridors. Habitat provides for the life history components of survivorship, reproduction, and movement. Wildlife corridors are linear landscape elements that provide for species movement and dispersal between two or more habitats but do not necessarily contain sufficient habitat for all life history requirements of a species, particularly reproduction (Rosenberg et al. 1995, 1997). For this reason, while corridors may provide for dispersal of most species, they may not provide for diffusion of populations over a longer time scale. The main prerequisite for corridors is that they increase animal movement between habitat patches. The mechanisms related to the efficacy of corridors are varied and species-specific (Soulé and Gilpin 1991; Beier and Loe 1992; Rosenberg et al. 1995; Haddad and Tewksbury 2005). Additionally, even if the corridor itself does not provide habitat functions, it is expected to at least maintain plant and animal populations, gene flow between the constituent subpopulations, and biodiversity (Haddad 1999). This ebb and flow of genetic diversity should occur if organisms are traversing corridors that physically connect geographically patchy populations (Beier and Loe 1992). Corridors thus provide physical conduits for maintaining specific genetic diversity, species richness, and community integrity. However, corridors may also connect population sources to “sink habitat” that can result in the net reduction of a population; in other words, the sink habitat either does not support the full life history of the species, or populations are more vulnerable to risk factors.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

**Wildlife Crossings.** Wildlife crossings are locations where wildlife must pass through physically constrained environments (e.g., roads, development) during movement within home ranges or during dispersal or migration between core areas of suitable habitat. Development and roads may transect or interrupt an existing natural crossing, creating dangerous or impassable barriers that impede the natural movement of a species and possibly expose it to higher risks of injury and mortality from adverse human interactions, such as increased vehicle collisions at roadways where no safe wildlife passage is provided (Meese et al. 2007).

#### **4.4.1 Project Area**

Wildlife movement is restricted through the site because the State Highway 78 (Hwy. 78) occurs north of the site and Jefferson Street, a major road, occurs to the west. There is also chain-link fencing along these areas. General wildlife movement could occur in the riparian corridor in Buena Vista Creek which leads to the Buena Vista Lagoon to the west. To the east, the riparian corridor leads to open space east of S. El Camino Real. Large mammals such as mule deer (*Odocoileus hemionus*) and mountain lion (*Puma concolor*) would not be expected to occur in this area due to the narrow corridor and urban surroundings. The project area could be considered a part of a larger habitat linkage as defined above, because it supports natural habitat mosaic and may support viable populations of smaller terrestrial species, such as rodents, smaller carnivores (raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), and rabbits (*Sylvilagus* spp.)), passerine birds, amphibians, reptiles, and invertebrates.

Because of the variety of riparian habitats in the project area (e.g., southern willow scrub, mulefat scrub, and freshwater marsh), birds and other species use this as a local wildlife corridor between the Buena Vista Lagoon and inland riparian areas.

#### **4.4.2 Oceanside HCP/NCCP**

The Oceanside HCP/NCCP evaluated corridors within the Oceanside subarea which were used to supplement the Multiple Habitat Conservation Program's (MHCP) (SANDAG 2003) Biological Core and Linkage Area analysis. The HCP/NCCP identifies Wildlife Corridor Planning Zones in the Oceanside subarea; however, the project area is not located within these corridors (City of Oceanside 2009).

#### **4.4.3 Carlsbad HMP**

The project area is located in between Core 1 and Core 2 Focused Planning Areas (FPA) identified in the Carlsbad HMP (City of Carlsbad 2004, Figure 3). The Core 1 FPA consists of Buena Vista Lagoon and adjoining wetland and upland habitats in northwest Carlsbad. The lagoon provides

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

habitat for critical populations of the American peregrine falcon (*Falco peregrinus anatum*), brown pelican (*Pelecanus occidentalis*), California least tern (*Sternula antillarum browni*), western snowy plover (*Charadrius nivosus nivosus*), light-footed clapper rail, and white-faced ibis (*Plegadis chihi*) (City of Carlsbad 2004).

Core 1 is connected to Core 2 via Buena Vista Creek (a part of which is located in the City of Oceanside). The creek is channelized between these two Cores; however, a continuous strip of riparian scrub remains, except where El Camino Real crosses the creek. According to the HMP, “this extremely narrow strip of riparian habitat may function as a wildlife movement corridor for some birds and mammals, including coyotes, but it is not considered a landscape level linkage.”

Within the northern portion of Core 2, least Bell’s vireo are known to occupy the riparian scrub in Buena Vista Creek (City of Carlsbad 2004), and although “recent survey information is lacking for this area, the extent and quality of the riparian vegetation suggest that this may represent a major population area for the vireo.”

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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## **5.0 PROJECT IMPACTS**

The purpose of Section 5 is to describe the direct, indirect, and cumulative impacts of the proposed project on special-status biological resources. The significance determinations for proposed or potential impacts are described in Section 6.

### **5.1 Definition of Impacts**

As described in Section 1.1, the proposed project includes hand removal of vegetation within the northern half of the channel between the upstream face of Jefferson Street Bridge east to the downstream face of the South Vista Way Bridge over a 5-year period (i.e., one-tenth of the channel each year). The vegetation removal will occur only in freshwater marsh and the understory of southern willow scrub; no trees, including riparian trees, will be removed during channel maintenance.

Based upon this project description, direct impacts (permanent and temporary), indirect (short-term and long-term), and cumulative impacts are defined below.

#### **5.1.1 Direct Impacts**

Direct impacts are impacts that result from direct ground disturbance activities. For the proposed project, this includes the proposed maintenance areas and access paths. However, it is important to note that the soil will not be disturbed as the vegetation will be cut at the base and removed.

##### **5.1.1.1 *Permanent Direct Impacts***

As described in Section 1.1, no more than one-fifth of the freshwater marsh and understory of the southern willow scrub within the northern channel within the project area (i.e., one-tenth of the entire channel) will be removed by hand each year. No trees, including riparian trees, will be removed during the maintenance activity. Freshwater marsh habitat typically passively revegetates within 6 months of being removed and can often function as suitable habitat the summer after being removed. Because 90% of the channel will not be maintained in any given year and due to the fact that freshwater marsh revegetates in less than 1 year, the direct impacts to biological resources associated with the proposed maintenance project are considered temporary impacts. Therefore, there are no direct permanent impacts associated with the proposed project.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

**5.1.1.2 Temporary Direct Impacts**

As described in Section 5.1.1.1, the impacts associated with the hand removal of vegetation in the channel are considered direct temporary impacts. The vegetation removal will occur in different sections of the northern half of the channel each year and each area will be maintained every 5 years. Direct impacts were quantified by overlaying the proposed vegetation removal area on geographic information system (GIS)-located biological resources (Figure 5-1).

Additionally, direct, temporary impacts could occur from removal or trampling of vegetation outside designated work zones in the absence of avoidance and minimization measures.

**5.1.2 Indirect Impacts**

Indirect impacts are reasonably foreseeable effects caused by the proposed project on remaining or adjacent biological resources outside the vegetation removal area. Indirect impacts may affect areas within the defined project area but outside the proposed vegetation removal area, including non-impacted areas and areas outside the project area, such as downstream effects. In most cases, indirect effects are not quantified.

**5.1.2.1 Short-Term Indirect Impacts**

Short-term indirect impacts are indirect impacts, as defined above, which could potentially occur during the maintenance activities. For the proposed project, most of the potential short-term indirect impacts are expected to occur along the northern half of the channel and downstream where native habitat may be indirectly impacted due to maintenance activities.

**5.1.2.2 Long-Term Indirect Impacts**

Long-term indirect impacts are indirect impacts, as defined above, which are operational-related or occur over the long-term (versus at that time of the maintenance activity).

**5.1.3 Cumulative Impacts**

Cumulative impacts refer to the combined environmental effects of the proposed project and other relevant projects. In some cases, the impact from a single project may not be significant, but when combined with other projects, the cumulative impact may be significant. This report does not include analysis of cumulative impacts; this analysis is being prepared separately for direct inclusion in the California Environmental Quality Act (CEQA) document being prepared for the project.



**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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## **5.2 Impacts to Vegetation Communities and Land Covers**

### **5.2.1 Direct Impacts**

#### **5.2.1.1 Permanent Direct Impacts**

There are no permanent direct impacts to vegetation communities or land covers associated with the proposed project.

#### **5.2.1.2 Temporary Direct Impacts**

Temporary direct impacts to vegetation communities were quantified by comparing the vegetation removal area with the boundaries of the vegetation communities mapped in the project area. Direct impacts to vegetation communities would occur as a result of vegetation removal activities. As described in the Project Description (Section 1.1), the vegetation removal will occur only in freshwater marsh and the understory of southern willow scrub; no trees, including riparian trees, will be removed during channel maintenance. Therefore, the impacts quantified for southern willow scrub are greater than the proposed impacts because only the understory of the southern willow scrub will be removed. While the impacts to open water are quantified because it lies within the delineated vegetation removal area, no vegetation removal will occur in areas of open water.

Table 5-1 shows the acreage of temporary direct impacts to vegetation communities and land covers in the project area over the 5-year maintenance cycle. Figure 5-1 shows, spatially, the vegetation removal areas by maintenance year (years 1 through 5). Vegetation communities considered special-status are denoted by an asterisk (\*) in the table below. Also, each vegetation community is in Habitat Group A of the City of Carlsbad Habitat Management Plan (HMP) and the City of Oceanside Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP).

**Table 5-1**  
**Temporary Direct Impacts to Vegetation Communities and Land Covers**

<b>Vegetation Communities and Land Covers</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Total (Acres)</b>
<i>Riparian/Water and Wetlands</i>						
Freshwater Marsh*	0.91	1.15	0.73	0.43	0.45	3.67
Southern Willow Scrub (understory only)*	—	0.05	0.04	0.68	0.51	1.28
<i>Subtotal</i>	<i>0.91</i>	<i>1.20</i>	<i>0.77</i>	<i>1.11</i>	<i>0.96</i>	<i>4.95</i>

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## Buena Vista Creek Channel Maintenance Project

### Biological Resources Technical Report

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**Table 5-1**  
**Temporary Direct Impacts to Vegetation Communities and Land Covers**

Vegetation Communities and Land Covers	Year 1	Year 2	Year 3	Year 4	Year 5	Total (Acres)
<i>Unvegetated Waters</i>						
Open Water*	0.13	–	–	–	–	0.13
<b>Total</b>	<b>1.04</b>	<b>1.20</b>	<b>0.77</b>	<b>1.11</b>	<b>0.96</b>	<b>5.08</b>

\* Considered a special-status vegetation community.

Additionally, direct, temporary impacts to vegetation communities could occur from removal or trampling of vegetation outside designated work zones in the absence of avoidance and mitigation measures.

## **5.2.2 Indirect Impacts**

### **5.2.2.1 Short-Term Indirect Impacts**

Potential short-term indirect impacts to special-status vegetation communities in the project area would primarily result from the generation of fugitive dust, increased human activity, and the introduction of chemical pollutants. Potential short-term indirect impacts that could affect the special-status vegetation communities that occur in the project area are described in detail as follows.

**Generation of Fugitive Dust.** Excessive dust can decrease the vigor and productivity of vegetation through effects on light, penetration, photosynthesis, respiration, transpiration, increased penetration of phytotoxic gaseous pollutants, and increased incidence of pests and diseases. Because the vegetation removal will occur within a channel that is perennially wetted, generation of fugitive dust during emergent wetland vegetation removal is not anticipated. However, without the implementation of avoidance and minimization measures, it is possible that fugitive dust could be generated while maintenance personnel are accessing the project site.

**Increased Human Activity.** The proposed project includes hand removal of vegetation every year. Increased human activity could result in the potential for trampling of vegetation and soil compaction outside of the vegetation removal footprint, which could affect the viability of the vegetation communities. Trampling can alter the ecosystem, creating gaps in vegetation and allowing exotic, non-native plant species to become established, leading to soil erosion. Trampling may also affect the rate of rainfall interception and evapotranspiration, soil moisture, water penetration pathways, surface flows, and erosion that could affect downstream water quality and habitat.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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**Chemical Pollutants.** Maintenance activities within the channel must be done using hand-held equipment. Currently, the vegetation removal is performed with non-mechanized hand tools (e.g., machetes, scythes, etc.). However, this analysis assumes that hand-held mechanized equipment could be used for maintenance activities and during the exotics removal, which is a component of the mitigation program (see Section 7, BIO-MM-1). Therefore, the use of mechanized equipment could result in chemical pollution from the release of fuels, oil, lubricants, or other materials. Additionally, the proposed mitigation (BIO-MM-1) includes the use of herbicides and hand-held equipment. The improper use of herbicides could cause unauthorized impacts to native vegetation, resulting in loss, degradation, and potential fragmentation both on site and downstream. Improper herbicide use could also adversely affect aquatic and terrestrial wildlife, through impacts on quality and forage and prey availability.

All special-status vegetation communities in the project area could be impacted by potential temporary, indirect impacts such as those previously listed.

#### **5.2.2.2 Long-Term Indirect Impacts**

Potential long-term indirect impacts to special-status vegetation communities in the project area would primarily result from changes in hydrology and hydraulics resulting from vegetation removal within the channel and could potentially result in the introduction of non-native invasive species. Potential long-term indirect impacts that could affect the special-status vegetation communities that occur in the project area are described in detail as follows.

**Changes in Hydrology and Hydraulics.** Removal of vegetation within the channel could result in hydrologic, hydraulic, and water quality-related impacts adjacent to and downstream of the vegetation removal area. Hydrologic and hydraulic alterations include changes in flow rates and patterns, which may affect adjacent and downstream aquatic, wetland, and riparian vegetation communities. Altered erosion, increased surface flows, and underground seepage can allow for the establishment of non-native plants. Changed hydrologic conditions can also alter seed bank characteristics and modify habitat for ground-dwelling fauna that may disperse seed.

**Non-Native, Invasive Plant Species.** Invasive plant species that thrive in edge habitats are a well-documented problem in Southern California and throughout the United States. The removal of vegetation could fragment native plant populations, which may increase the likelihood of invasion by non-native plants in those areas. There are several adverse effects of non-native species in natural open areas, including, but not limited to, the fact that non-native, invasive plants compete for light, water, and nutrients and can create a thatch that blocks sunlight from reaching smaller native plants. Non-native, invasive plant species may alter habitats and displace

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

native species over time, leading to extirpation of native plant species and unique vegetation communities. The introduction of non-native, invasive animal species could negatively affect native species that may be pollinators of or seed dispersal agents for plants within special-status vegetation communities (Bossard et al. 2000).

All special-status vegetation communities in the project area could be impacted by potential long-term or permanent indirect impacts such as those previously listed.

### **5.3 Impacts to Special-Status Plant Species**

There are no special-status plant species with a moderate or high potential to occur within the project study area. Appendix F includes the special-status plant species that are either not expected to occur or have a low potential to occur; these species are not further analyzed in this biological resources technical report (BTR) because no direct, indirect, or cumulative impacts are expected.

### **5.4 Impacts to Special-Status Wildlife Species**

#### **5.4.1 Direct Impacts**

##### **5.4.1.1 *Permanent Direct Impacts***

There are no permanent direct impacts associated with the proposed project.

##### **5.4.1.2 *Temporary Direct Impacts***

Appendix H describes the special-status wildlife species that have been observed or have high or moderate potential to occur on site. Temporary direct impacts to special-status wildlife species were quantified by comparing the limits of the vegetation removal area with suitable habitat for these wildlife species.

Temporary direct impacts to special-status wildlife species would primarily result from vegetation removal activities within the proposed vegetation removal area. Clearing or trampling of vegetation communities outside the proposed impact limits could occur in the absence of avoidance, minimization, and mitigation measures. These potential effects could reduce suitable habitat for wildlife species and alter their ecosystem, thus creating gaps in vegetation that allow exotic, non-native plant species to become established.

Temporary direct impacts to special-status species with a moderate or high potential to occur or that have been observed on site, are described below by the species' habitat association.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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**Riparian Woodland/Scrub Bird Species**

Least Bell's vireo (*Vireo bellii pusillus*)—Federal and State Endangered; U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern (BCC); covered under the City of Carlsbad HMP and Oceanside HCP/NCCP), including one pair and a juvenile, a transitory pair, and a single male mapped in southern willow scrub along the Buena Vista Creek channel during the 2012 focused surveys for least Bell's vireo. Yellow warbler (*Setophaga petechia*; USFWS BCC; California Department of Fish and Wildlife (CDFW) Species of Special Concern (SSC)); Nuttall's woodpecker (*Picoides nuttallii*; USFWS BCC), and Allen's hummingbird (*Selasphorus sasin*; USFWS BCC) were also observed and likely nesting in the southern willow scrub on site (Figure 5-1).

Additional species that have moderate or high potential to nest, forage, and/or winter in southern willow scrub within the project area include Cooper's hawk (*Accipiter cooperii*; CDFW Watch List (WL); covered under the Carlsbad HMP and Oceanside HCP/NCCP), white-tailed kite (*Elanus leucurus*; CDFW fully protected (FP)), southwestern willow flycatcher (*Empidonax traillii extimus*; Federal and State Endangered; covered under the Carlsbad HMP and Oceanside HCP/NCCP), merlin (*Falco columbarius*; CDFW WL), yellow-breasted chat (*Icteria virens*; CDFW SSC; covered under the Carlsbad HMP and Oceanside HCP/NCCP), and western bluebird (*Sialia mexicana*; covered under the Oceanside HCP/NCCP).

As described in Section 5.2.1.2, there will be thinning and removal of vegetation in the understory of southern willow scrub, but there will not be any removal of willows as part of the proposed project. Therefore, there are no direct impacts to suitable habitat for these species.

**Freshwater Marsh and Other Wetland Habitat Bird Species**

Clark's marsh wren (*Cistothorus palustris clarkae*; CDFW SSC) was observed during 2012 surveys and are likely nesting in the project area. Focused surveys for light-footed clapper rail (*Rallus longirostris levipes*; Federal and State Endangered; USFWS BCC; CDFW FP; covered under the Carlsbad HMP and Oceanside HCP/NCCP) were conducted in 2012 and were negative (see Appendix C), but this species has been documented nesting in Buena Vista Lagoon (Unitt 2004; CDFG 2012b), and there is suitable freshwater marsh habitat in the project area. The light-footed clapper rail has a moderate potential to forage in the freshwater marsh and southern coastal saltmarsh habitat within the project area.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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Additionally, while not observed, least bittern (*Ixobrychus exilis*; USFWS BCC; CDFW SSC) has a moderate potential to nest and/or forage in the freshwater marsh and southern coastal saltmarsh habitat within the project. Northern harrier (*Circus cyaneus*; CDFW SSC) was not observed during 2012 surveys, but there is moderate potential for this species to nest in some of the freshwater marsh habitat on site.

There are temporary direct impacts to 3.67 acres of freshwater marsh over the five-year maintenance cycle, with a range of 0.43 acres to 1.15 acres of impact per year, depending on the maintenance year (refer to Table 5-1). Figure 5-1 shows which areas will be impacted each year during the 5-year cycle. Freshwater marsh habitat typically revegetates within 6 months of being removed and can often function as suitable habitat the summer after being removed. The maintenance activities would not result in direct impacts to southern coastal saltmarsh habitat. Also, while the impacts to open water are quantified because it lies within the delineated vegetation removal area, no vegetation removal will occur in areas of open water.

Direct temporary impacts to special-status wildlife species that breed and/or forage in freshwater marsh (Clark's marsh wren, least bittern, and northern harrier) or that have the potential to use freshwater marsh (light-footed clapper rail) are considered a significant impact, absent mitigation.

### **Special-Status Amphibians and Reptiles**

Although no special-status amphibians or reptiles were observed during the 2012 surveys, the following species have high potential to occur in the project area: western spadefoot (*Spea hammondi*; CDFW SSC; covered under the Oceanside HCP/NCCP), two-striped garter snake (*Thamnophis hammondi*; CDFW SSC), and South Coast garter snake (*Thamnophis sirtalis* ssp.; CDFW SSC).

These species can occur in the habitats that would be directly impacted by the project (Table 5-1), including southern willow scrub, freshwater marsh, and open water. Based on the minimal impacts to vegetation each year (between 0.77 acre and 1.20 acres per year) and the fact that vegetation will be removed by hand, impacts to individual species are not expected, and impacts to suitable habitat are considered minimal.

### **Special-Status Mammals**

Dulzura pocket mouse (*Chaetodipus californicus femoralis*; CDFW SSC) has moderate potential to occur in limited riparian-scrub ecotone habitat in the project area (i.e., coastal sage scrub). Pallid bat (*Antrozous pallidus*; CDFW SSC) and western mastiff bat (*Eumops perotis californicus*; CDFW SSC) have moderate potential to forage over the project area.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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There are no impacts to coastal sage scrub; therefore, no impacts to Dulzura pocket mouse are anticipated. Bats would continue foraging over the project area once maintenance activities are initiated and, therefore, would not be impacted by the proposed project.

Additionally, direct, temporary impacts could occur from removal or trampling of suitable habitat for special-status wildlife outside designated work zones in the absence of avoidance and minimization measures.

#### **5.4.2 Indirect Impacts**

##### **5.4.2.1 Short-Term Indirect Impacts**

Short-term or temporary indirect impacts to special-status wildlife species would primarily result from vegetation removal activities. Potential temporary indirect impacts could occur as a result of generation of fugitive dust, noise, chemical pollutants, increased human activity, and non-native animal species. All special-status wildlife species observed or with a moderate to high potential to occur on site could be impacted by potential temporary indirect impacts such as those listed below.

**Generation of Fugitive Dust.** Dust can impact vegetation surrounding the project area, resulting in changes in the community structure and function. These changes could result in impacts to suitable habitat for special-status wildlife species. Because the vegetation removal will occur within a channel that is perennially wetted, generation of fugitive dust during emergent wetland vegetation removal is not anticipated. However, without the implementation of avoidance and minimization measures, it is possible that fugitive dust could be generated while maintenance personnel are accessing the project site.

**Noise.** Project-related noise could occur from equipment used during vegetation clearing. Noise impacts can have a variety of indirect impacts on wildlife species, including increased stress, weakened immune systems, altered foraging behavior, displacement due to startle, degraded communication with conspecifics (e.g., masking), damaged hearing from extremely loud noises, and increased vulnerability to predators (Lovich and Ennen 2011; Brattstrom and Bondello 1983, cited in Lovich and Ennen 2011). The use of non-mechanized hand tools would produce very little noise and is not anticipated to have a substantial adverse effect on wildlife. The use of mechanized hand tools, however, could cause temporary disruption of behaviors for the period the tool is in use, including causing wildlife to temporarily vacate an area and suppressing important activities such as foraging.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

**Chemical Pollutants.** Accidental spills of hazardous chemicals could contaminate surface waters and indirectly impact wildlife species through direct or secondary poisoning and other sublethal effects (e.g., endocrine impacts), reduced prey availability, or altering suitable habitat.

**Increased Human Activity.** Maintenance activities can deter wildlife from using habitat areas near or adjacent to the proposed activities while activities are in progress. Pets introduced to a site from maintenance workers can also impact wildlife.

**Non-Native Animal Species.** Trash and garbage from project-related activities could attract invasive predators such as ravens, gulls, crows, opossums, skunks, and raccoons that could impact the native wildlife species in the project area, including increased predation.

#### **5.4.2.2 Long-Term Indirect Impacts**

Potential long-term or permanent indirect impacts to special-status wildlife species include the invasion of non-native, invasive plant and animal species and altered hydrology and hydraulics.

**Non-Native, Invasive Plant and Animal Species.** Invasive plant species that thrive in edge habitats are a well-documented problem in Southern California and throughout the United States. Removal of vegetation could fragment native plant populations, which may increase the likelihood of invasion by non-native plants due to the increased interface between natural habitats and developed areas. There are several adverse effects of non-native species in natural open areas, including but not limited to the fact that non-native, invasive plants compete for light, water, and nutrients and can create a thatch that blocks sunlight from reaching smaller native plants. Non-native, invasive plant species may alter habitats and displace native species over time, leading to extirpation of native plant species and subsequently suitable habitat for special-status and other native wildlife species (Bossard et al. 2000). Invasive plant communities may also be an attractant to non-native wildlife such as house mouse (*Mus musculus*) and rats (*Rattus* spp.) that may compete with and/or displace native species.

**Changes in Hydrology and Hydraulics.** Removal of vegetation within the channel could result in hydrologic, hydraulic, and water quality-related impacts adjacent to and downstream of the vegetation removal area. Hydrologic and hydraulic alterations include changes in flow rates and patterns, which may affect adjacent and downstream habitat for special-status wildlife species. Altered erosion, increased surface flows, and underground seepage can allow for the establishment of non-native plants. Changed hydrologic conditions can also alter seed bank characteristics and modify habitat for ground-dwelling fauna that may disperse seed.

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## Buena Vista Creek Channel Maintenance Project

### Biological Resources Technical Report

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## 5.5 Impacts to Jurisdictional Waters

### 5.5.1 Direct Impacts

#### 5.5.1.1 *Permanent Direct Impacts*

There are no permanent impacts associated with the proposed project.

#### 5.5.1.2 *Temporary Direct Impacts*

Temporary direct impacts to jurisdictional waters were quantified by comparing the vegetation removal area with the jurisdictional boundaries mapped in the project area. Direct impacts to jurisdictional waters would occur as a result of vegetation removal activities. As described in the Project Description (Section 1.1), the vegetation removal will occur only in freshwater marsh and the understory of southern willow scrub; no trees, including riparian trees, will be removed during channel maintenance. Therefore, the impacts quantified for southern willow scrub are greater than the proposed impacts because only the understory of the southern willow scrub will be removed. While the impacts to open water are quantified because it lies within the delineated vegetation removal area, no vegetation removal will occur in areas of open water.

Table 5-2 shows the acreage of temporary direct impacts to jurisdictional waters, including wetlands, in the project area over the 5-year maintenance cycle. Figure 5-2 shows, spatially, the vegetation removal areas by maintenance year (years 1–5) and the underlying jurisdiction of each impact area. Over a 5-year period, 1.61 acres of waters, including wetlands, under the jurisdiction of the ACOE, RWQCB, CDFW, and CCC, and an additional 3.47 acres of waters, including wetlands, under the jurisdiction of the ACOE, RWQCB, and CDFW, would be maintained.

**Table 5-2**  
**Temporary Direct Impacts to Jurisdictional Waters, Including Wetlands**

<b>Vegetation Communities and Land Covers</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Total (Ac.)</b>
<i>ACOE/RWQCB/CDFW/CCC</i>						
Freshwater Marsh	0.91	0.52	—	—	—	1.43
Southern Willow Scrub	—	0.05	—	—	—	0.05
Open Water	0.13	—	—	—	—	0.13
<i>Subtotal</i>	<i>1.04</i>	<i>0.57</i>	<i>—</i>	<i>—</i>	<i>—</i>	<i>1.61</i>
<i>ACOE/RWQCB/CDFW</i>						
Freshwater Marsh	—	0.63	0.73	0.43	0.45	2.24
Southern Willow Scrub	—	—	0.04	0.68	0.51	1.23
<i>Subtotal</i>	<i>—</i>	<i>0.63</i>	<i>0.77</i>	<i>1.11</i>	<i>0.96</i>	<i>3.47</i>
<b>Total ACOE, RWQCB, CDFW, and/or CCC</b>	<b>1.04</b>	<b>1.20</b>	<b>0.77</b>	<b>1.11</b>	<b>0.96</b>	<b>5.08</b>

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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Additionally, direct, temporary impacts to jurisdictional wetlands could occur from removal or trampling of vegetation outside designated work zones in the absence of avoidance and minimization measures.

## **5.5.2 Indirect Impacts**

### **5.5.2.1 Short-Term Indirect Impacts**

Potential short-term indirect impacts to jurisdictional waters, including wetlands, are the same as those that could affect special-status vegetation communities (see Section 5.2.2.1) and include the generation of fugitive dust, increased human activity, and the introduction of chemical pollutants. All jurisdictional waters, including wetlands, on site could be impacted by potential short-term indirect impacts.

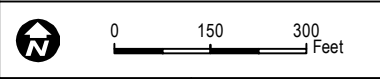
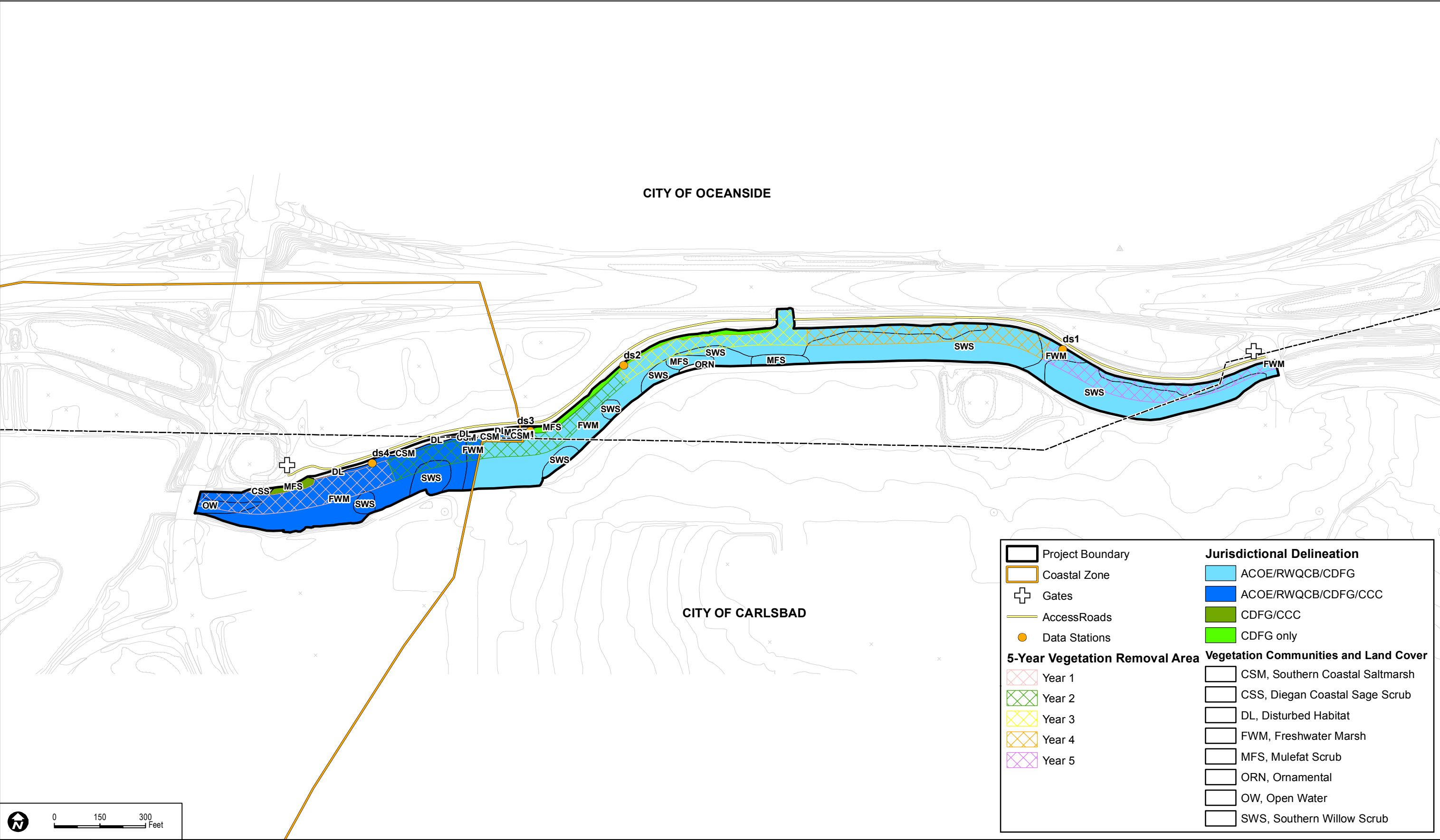
### **5.5.2.2 Long-Term Impacts**

Potential long-term indirect impacts to jurisdictional waters, including wetlands, are the same as those that could affect special-status vegetation communities (see Section 5.2.2.2) and include changes in hydrology and hydraulics resulting from vegetation removal within the channel and the introduction of non-native invasive species. All jurisdictional waters, including wetlands, on site could be impacted by potential long-term indirect impacts.

## **5.6 Impacts to Wildlife Corridors and Habitat Connectivity**

### **5.6.1 Direct Impacts**

The Buena Vista Creek channel functions as a local wildlife corridor and linkage to the Buena Vista Lagoon downstream of the project area. Maintenance activities within Buena Vista Creek would temporarily impact portions of the project area, and would thus impact the functions of the corridor and linkage, temporarily. Direct, temporary impacts to the Buena Vista Creek channel are considered minimal because one-fifth of the northern half of the stream channel would be affected in any given year over an approximately 4-week period. Additionally, the vegetation removal will occur only in freshwater marsh, which on average revegetates within 6 months of being removed, and the understory of southern willow scrub; no trees, including riparian trees, will be removed during channel maintenance.



**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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### **5.6.2 Indirect Impacts**

Maintenance activities would take place during the daytime and would not affect wildlife species, such as most mammals that are most active in evenings and nighttime. Wildlife species such as birds, rabbits, and lizards are active in the daytime; however, because the southern half of the vegetation within the creek will be preserved and the vegetation in the northern half of the channel will be removed incrementally, Buena Vista Creek will continue to function as a habitat linkage and wildlife movement corridor.

## **5.7 Impacts to Regional Resource Planning**

Assessing impacts to regional resource planning takes into consideration whether the project is in conflict with the requirements of an adopted plan, such as an NCCP, HCP, an associated subarea plan, or other regional resource planning effort. As described in Section 1.2, the proposed project study area is with the City of Carlsbad HMP, a final plan, and the City of Oceanside HCP/NCCP, a draft plan used as a guidance document for projects in the City of Oceanside. The proposed project is consistent with both of these plans, as described below in Sections 5.7.1 and 5.7.2.

### **5.7.1 City of Carlsbad HMP**

Within the City of Carlsbad, vegetation removal activities would occur within a total of 1.8 acres of Focused Planning Area HMP Core Number 1 over a 5-year period. Specifically, in the first year, 1.0 acre of Core Number 1 would be maintained, and in the second year 0.8 acre of Core Number 1 would be maintained. In the remaining years (Years 3–5), no vegetation would be removed in Core Number 1, and overall, 2.4 acres of Core Number 1 would be avoided and subject to exotics removal (BIO-MM-1). However, the impacts to 1.8 acres with Core Number 1 are outside of an existing or proposed hardline preserve area or standards areas (Figure 5-3) and, thus, are not targeted for conservation (City of Carlsbad 2004).

Additionally, the Carlsbad HMP includes measures to minimize and mitigate impacts to Covered Species (Section D-6 of the HMP). The Covered Species observed on the project site include Cooper's hawk, yellow-breasted chat, and least Bell's vireo. Covered Species with a moderate potential to occur include southwestern willow flycatcher and light-footed clapper rail; however, focused protocol-level surveys for both species were negative (see Appendices C and D). While this proposed project is not a development project, the proposed project is consistent with the applicable species-specific measures, and the following measures have been or will be implemented:

1. Focused protocol-level surveys for least Bell's vireo, southwestern willow flycatcher, and light-footed clapper rail were conducted in 2012.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

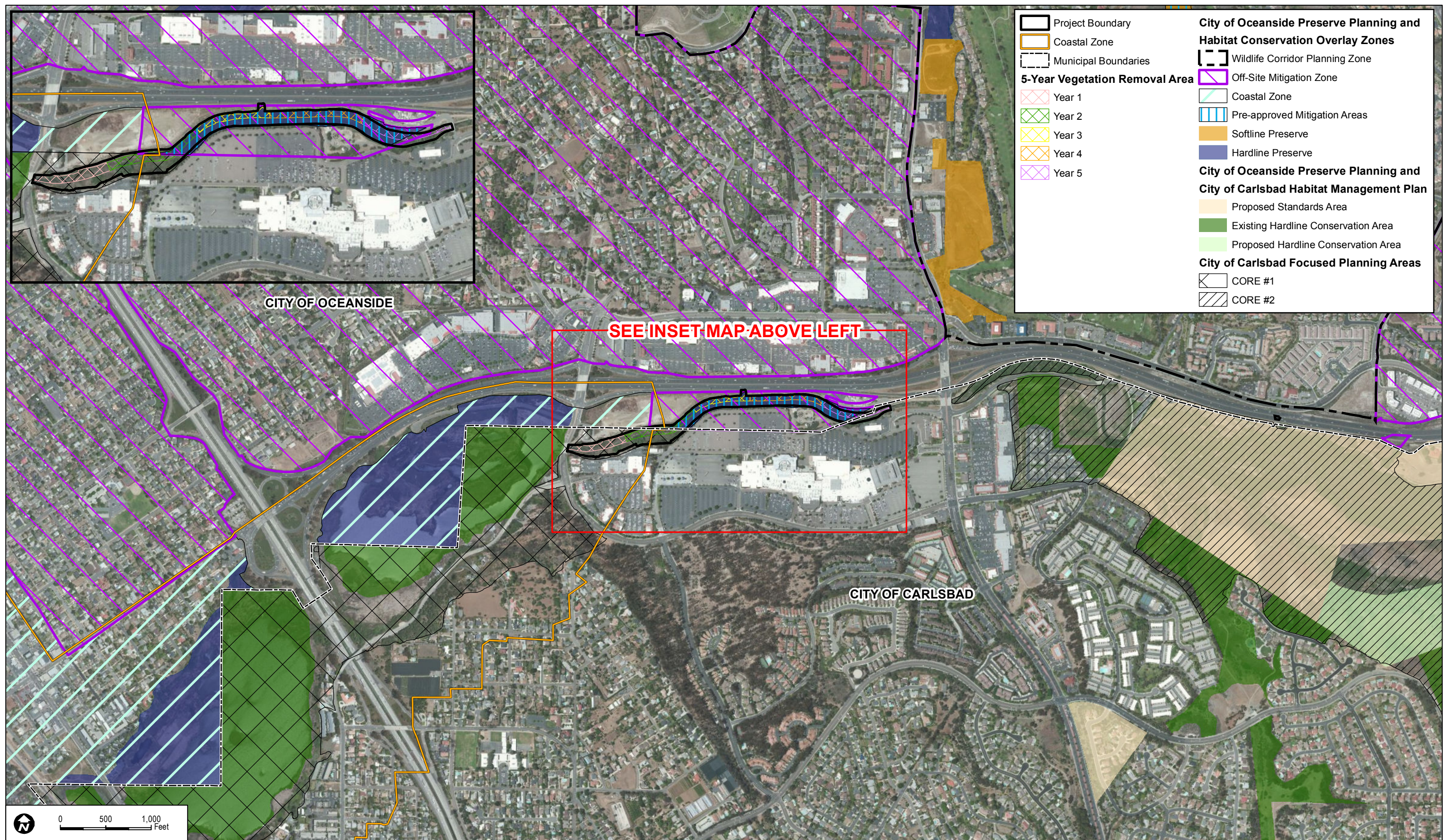
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2. The removal of vegetation has been avoided and minimized to the maximum extent practicable by implementing a phased maintenance program whereby only one-tenth of the vegetation will be removed by hand each year, and only freshwater marsh and understory species will be removed. No willows or other riparian tree species will be removed; therefore, there are no direct impacts to suitable habitat for least Bell's vireo, yellow-breasted chat, and Cooper's hawk (Covered Species observed on site), or to southwestern willow flycatcher (Covered Species with a moderate potential to occur on site).
3. None of the suitable breeding habitat (salt marsh habitats) for light-footed clapper rail, a Covered Species, will be impacted. The Carlsbad HMP states that freshwater marsh habitats upstream from salt marshes are commonly used by clapper rails during fall and winter. Freshwater marsh habitat typically passively revegetates within 6 months of being removed and can often function as suitable habitat the summer after being removed. Because only one-tenth of the vegetation, or between 0.43 acre and 1.15 acres of freshwater marsh, will be removed in any given year and the impacts are temporary, the proposed project is consistent with the species-specific object for light-footed clapper rail.
4. Because there will be no soil disturbance, the channel contours will not be modified.
5. The City will obtain necessary regulatory permits, including a Streambed Alteration Agreement from the CDFW, prior to commencing the proposed maintenance activities.
6. An exotics plant species control plan will be prepared as part of the mitigation program (BIO-MM-1), consistent with the Carlsbad HMP, Habitat Restoration and Revegetation, Section F-2. The goals of the plan will ensure that the natural creek fluvial processes are interrupted on the southern, unmaintained portion of the channel and that riparian connection to downstream and upstream portions of focused planning areas are maintained.
7. Vegetation removal activities will occur outside of the breeding season for Covered Species observed on site or with the potential to occur on site (March 15–September 15).

Therefore, the proposed project is consistent with requirements of the Carlsbad HMP.

#### **5.7.2 City of Oceanside's HCP/NCCP**

The proposed project is consistent with the requirements of the Oceanside HCP/NCCP. Specifically, as required in Section 5.3.2 of the HCP/NCCP, more than 50% of the area (2.9 acres) located within the Pre-approved Mitigation Area shall be avoided, and only 2.8 acres (less than 50%) of vegetation may be subject to vegetation removal activities over a 5-year period. The proposed mitigation includes exotics removal on the southern half of the channel including the 2.9 acres that lies within the Off-site Mitigation Zone of the Pre-approved Mitigation Areas. The proposed project will not result in an impact to coastal sage scrub.



**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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Additionally, in accordance with Section 5.2.4 of the Subarea Plan, there will be no-net-loss of wetlands. The vegetation removal will occur only in freshwater marsh and the understory of southern willow scrub; no trees, including riparian trees, will be removed during channel maintenance. While the impacts to open water are quantified because it lies within the delineated vegetation removal area, no vegetation removal will occur in areas of open water. Freshwater marsh habitat typically passively revegetates within 6 months of being removed and can often function as suitable habitat the summer after being removed. Because 90% of the channel will not be maintained in any given year, and due to the fact that freshwater marsh revegetates in less than 1 year, the direct impacts to biological resources associated with the proposed maintenance project are considered temporary impacts, and there will be no-net-loss of wetlands. Regardless, an exotics plant species control plan will be prepared as part of the mitigation program (BIO-MM-1), on site and within the affected drainage per Section 5.2.4 of the Subarea Plan.

Additionally, as part of the mitigation program, a project biologist will implement or verify implementation of Best Management Practices and conduct pre-activity education meetings consistent the project implementation guidelines provided in Section 5.2.8 of the Oceanside HCP/NCCP (BIO-MM-2).

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**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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## **6.0 SIGNIFICANT IMPACTS**

The purpose of this section is to identify the significant direct, indirect, and cumulative impacts of the project.

### **6.1 Explanation of Findings of Significance**

Impacts to special-status vegetation communities, plants, and wildlife species; jurisdictional waters, including wetlands; wildlife corridors and habitat connectivity; and regional resource planning must be quantified and analyzed to determine whether such impacts are significant under the California Environmental Quality Act (CEQA). CEQA Guidelines Section 15064(b) states that an ironclad definition of “significant” effect is not possible because the significance of an activity may vary with the setting. Appendix G of the CEQA Guidelines, however, does provide “examples of consequences which may be deemed to be a significant effect on the environment” (CEQA Guidelines Section 15064[e]). These effects include substantial effects on rare or endangered species of animal or plant or the habitat of the species. Guidelines Section 15065(a) is also helpful in defining whether a project may have “a significant effect on the environment.” Under that section, a proposed project may have a significant effect on the environment if the project has the potential to: (1) substantially degrade the quality of the environment, (2) substantially reduce the habitat of a fish or wildlife species, (3) cause a fish or wildlife population to drop below self-sustaining levels, (4) threaten to eliminate a plant or animal community, (5) reduce the number or restrict the range of a rare or endangered plant or animal, or (6) eliminate important examples of a major period of California history or prehistory.

The following are the significance thresholds for biological resources provided in the CEQA Appendix G Environmental Checklist, which states that a project could potentially have a significant affect if it:

- Has a substantial adverse effect, either directly or through habitat modifications, on any species identified as being a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS)
- Has a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS
- Has a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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- Interferes substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impedes the use of native wildlife nursery sites
- Conflicts with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflicts with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

The evaluation of whether or not an impact to a particular biological resource is significant must consider both the resource itself and the role of that resource in a regional context. Substantial impacts are those that contribute to, or result in, permanent loss of an important resource, such as a population of a rare plant or animal. Impacts may be important locally because they result in an adverse alteration of existing site conditions, but considered not significant because they do not contribute substantially to the permanent loss of that resource regionally. The severity of an impact is the primary determinant of whether or not that impact can be mitigated to a level below significant.

The following significance determinations were made based on the impacts from the proposed project.

## **6.2 Vegetation Communities or Land Covers**

### **6.2.1 Significant Impacts to Vegetation Communities or Land Covers**

The proposed project will result in direct temporary impacts to vegetation communities and land cover types as summarized in Table 5-1 in Section 5.2. Vegetation communities considered special-status by the City of Carlsbad Habitat Management Plan (HMP) and the City of Oceanside Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP) include those listed in Habitat Groups A through E (City of Carlsbad 2004; City of Oceanside 2009). There are temporary impacts to the following special-status vegetation communities: freshwater marsh, southern willow scrub<sup>1</sup>, and open water, which are all in Habitat Group A of the City of Carlsbad HMP and the City of Oceanside HCP/NCCP.

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<sup>1</sup> As described in the Impacts to Vegetation Communities (Section 5.2), vegetation removal will occur only in the understory of southern willow scrub; no trees, including riparian trees, will be removed during channel maintenance.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

Proposed direct temporary impacts to special-status vegetation communities are considered a significant impact, absent mitigation (Impact BIO-1). Additionally, potential direct temporary impacts to special-status vegetation communities on site as a result of disturbance outside of the impact area would be significant, absent mitigation (Impact BIO-2).

Potential short-term indirect impacts to vegetation communities, including fugitive dust, increased human activity, and the introduction of chemical pollutants (including herbicides), would be significant, absent mitigation (Impact BIO-3). Finally, potential long-term indirect impacts to vegetation communities, including changes in hydrology and the introduction of non-native invasive species, would be significant, absent mitigation (Impact BIO-4).

#### **6.2.2 Impacts to Vegetation Communities or Land Covers Determined to be Less than Significant**

Potential direct temporary impacts to vegetation communities or land covers that are not considered special-status (i.e., disturbed land or ornamental) as a result of disturbance outside of the impact area would not be a significant impact because these land covers have little habitat value.

### **6.3 Special-Status Plant Species**

No special-status plants were detected in the study area. No special-status plant species are expected to have high or moderate potential to occur either. Therefore, direct and indirect impacts to special-status plants are not anticipated.

### **6.4 Special-Status Wildlife Species**

#### **6.4.1 Significant Impacts to Special-Status Wildlife**

Direct temporary impacts to special-status wildlife species that use freshwater marsh are considered a significant impact, absent mitigation. Specifically, loss of suitable breeding habitat and/or foraging habitat for Clark's marsh wren (*Cistothorus palustris clarkae*; CDFW Species of Special Concern (SSC)), least bittern (*Ixobrychus exilis*; USFWS Birds of Conservation Concern (BCC); CDFW SSC), and northern harrier (*Circus cyaneus*; CDFW SSC) is considered significant (Impact BIO-5). While not observed during 2012 focused protocol-level surveys, light-footed clapper rail (*Rallus longirostris levipes*; Federal and State Endangered; USFWS BCC; CDFW Fully Protected (FP); Covered under the Carlsbad HMP and Oceanside HCP/NCCP) has a moderate potential to forage in the freshwater marsh.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

Potential direct temporary impacts to suitable habitat for special-status wildlife as a result of disturbance outside of the impact area would be significant, absent mitigation (Impact BIO-6).

Potential short-term indirect impacts to special-status wildlife including fugitive dust, chemical pollutants (including herbicides), increased human activity, noise, and non-native animal species would be significant, absent mitigation (Impact BIO-7). Potential long-term indirect impacts to special-status wildlife, including the invasion of non-native, invasive plant and animal species and changes in hydrology, would be significant, absent mitigation (Impact BIO-8).

#### **6.4.2 Impacts to Special-Status Wildlife Determined to be Less than Significant**

The proposed project will not result in direct temporary impacts to special-status riparian woodland/scrub bird species. Potential impacts to special-status amphibians and reptiles are not considered significant because the removal of vegetation each year would be minimal (between 0.77 acre and 1.20 acres per year). Additionally, loss of individual special-status amphibians and reptiles are not expected because the vegetation will be removed by hand. Finally, the proposed project would not result in significant impacts to special-status bats because they will continue to use the project area for foraging after maintenance activities are initiated.

### **6.5 Jurisdictional Waters**

#### **6.5.1 Significant Impacts to Jurisdictional Waters**

The proposed project will result in direct temporary impacts to several jurisdictional waters, including wetlands as summarized in Table 5-2 in Section 5.5. Jurisdictional waters are regulated by the U.S. Army Corps of Engineers (ACOE), Regional Water Quality Control Board (RWQCB), CDFW, and/or California Coastal Commission (CCC). There are temporary impacts to the following jurisdictional waters or wetlands: freshwater marsh, southern willow scrub<sup>2</sup>, and open water.

Direct temporary impacts to jurisdictional waters or wetlands are considered a significant impact, absent mitigation (Impact BIO-9). Potential direct temporary impacts to all jurisdictional waters or wetlands on site as a result of disturbance outside of the impact area would be significant, absent mitigation (Impact BIO-10).

Potential short-term indirect impacts to jurisdiction waters, including fugitive dust, increased human activity, and the introduction of chemical pollutants (including herbicides), would be

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<sup>2</sup> As described in the Impacts to Vegetation Communities (Section 5.2), vegetation removal will occur only in the channel and in the understory of woodland habitat; no trees will be removed.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

significant, absent mitigation (Impact BIO-11). Potential long-term indirect impacts to jurisdictional waters, including changes in hydrology and the introduction of non-native invasive species, would be significant, absent mitigation (Impact BIO-12).

**6.5.2 Impacts to Jurisdictional Waters Determined to be Less than Significant**

There are no potential direct or indirect impacts to jurisdictional waters that are considered less than significant.

**6.6 Wildlife Corridors and Habitat Connectivity**

**6.6.1 Significant Impacts to Wildlife Corridors and Habitat Connectivity**

There are no significant impacts to wildlife corridors and habitat connectivity.

**6.6.2 Impacts to Wildlife Corridors and Habitat Connectivity Determined to be Less than Significant**

Proposed impacts to the Buena Vista Creek channel, a local wildlife corridor and linkage, are considered minimal because only one-fifth of the northern half of the stream channel or one-tenth of the channel would be affected in any given year. Additionally, the vegetation removal will occur only in freshwater marsh, which on average revegetates within 6 months of being removed, and the understory of southern willow scrub; no trees, including riparian trees, will be removed during channel maintenance. Maintenance activities would take place during the daytime and would not affect nocturnal wildlife species. Diurnal species could continue to use the southern half of the vegetation within the channel, which will be avoided, and the unmaintained portions of the channel, which totals 90% of the channel in any given year. Therefore, the Buena Vista Creek channel will continue to function as a habitat linkage and wildlife movement corridor following proposed project implementation.

**6.7 Regional Resource Planning**

The proposed project is consistent with requirements of the Carlsbad HMP and Oceanside HCP/NCCP. Therefore, there are no conflicts with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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## **7.0 MITIGATION**

This section of the biological resources technical report (BTR) described the mitigation that will be implemented to reduce significant impacts (described in Section 6) to less-than-significant levels. In the context of avoiding and minimizing impacts to biological resources, it is important to note that vegetation removal activities will not occur from March 15–September 15, which is outside of the breeding season for special-status bird species observed or with a moderate to high potential to occur on the project site.

### **7.1 Special-Status Vegetation Communities**

This section describes the mitigation measures required for significant impacts to special-status vegetation communities.

**Impact BIO-1:** Temporary direct impacts to special-status vegetation communities within the proposed vegetation removal area.

The proposed project would result in direct temporary impacts to approximately 3.67 acres of freshwater marsh and approximately 1.28 acres of understory species in southern willow scrub over a 5-year period. Both freshwater marsh and southern willow scrub (understory) are considered special-status vegetation communities. Additionally, maintenance activities may occur within 0.13 acre of open water over a 5-year period. However, no vegetation removal will occur in areas of open water.

**BIO-MM-1:** Proposed mitigation for these temporary impacts to special-status vegetation communities will be through on-site enhancement. The Maintenance District will be responsible for monitoring and eradicating exotic plant species within the 11.2-acre project area annually for the duration of the maintenance program. The enhancement will be implemented in accordance with the Buena Vista Creek Channel Exotic Plant Species Control Plan (Dudek 2003) and any additional updates to this plan required by the California Department of Fish and Wildlife (CDFW) in the Streambed Alteration Agreement. A monitoring report documenting the invasive exotic plant species removed and an assessment of the functions and values of the 11.2-acre project area shall be submitted to the City of Carlsbad City Planner and City Engineer annually.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

**Level of Significance after Mitigation:** Less than significant.

Enhancement activities will replace the temporal loss of functions and values of the special-status vegetation communities after implementation of the maintenance activities.

**Impact BIO-2:** Temporary direct impacts to special-status vegetation communities outside of the proposed vegetation removal area.

**BIO-MM-2:** To prevent inadvertent disturbance to areas outside the limits of the maintenance areas, the vegetation removal shall be monitored by a qualified biologist. A biologist shall be contracted to perform biological monitoring during maintenance activities.

Additionally, the project biologist will implement or verify implementation of the following monitoring requirements and Best Management Practices (BMPs) and conduct pre-activity education meetings to review each of these requirements and BMPs. Monitoring reports and a post-construction monitoring report will be prepared to document compliance with BIO-MM-2.

1. During vegetation removal activities, biologist will conduct daily site visits.
2. Biologist will discuss procedures for minimizing harm to or harassment of wildlife encountered during maintenance activities with the contractor and other key construction personnel prior to activities.
3. Biologist will review and/or designate the vegetation removal area in the field with the contractor in accordance with the final plan.
4. Biologist will flush special-status species (i.e., avian or other mobile species) from occupied habitat areas immediately prior to vegetation removal activities.
5. Maintenance vehicles shall not exceed 15 miles per hour on unpaved roads adjacent to project site or the right-of-way accessing the site.
6. If trash and debris need to be stored overnight during the maintenance activities, fully covered trash receptacles that are animal-proof and weather-proof will be used by the maintenance contractor to contain all food, food scraps, food wrappers, beverage containers, and other miscellaneous trash. Alternatively, standard trash receptacles may be used during the day, but must be removed each night.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

7. Cut vegetation must be hauled out of the channel and stored, if necessary, where it cannot be washed by rainfall or runoff into the channel. When maintenance activities are completed, any excess materials or debris will be removed from the project site.
8. Temporary structures and storage of construction materials will not be located in jurisdictional waters, including wetlands and riparian areas.
9. Staging/storage areas for construction equipment and materials will not be located in jurisdictional waters, including wetlands and riparian areas.
10. Any hand-held equipment used for maintenance activities that is operated within jurisdictional waters, including wetlands and riparian areas, will be checked and maintained by the operator daily to prevent leaks of oil or other petroleum products that could be deleterious to aquatic life if introduced to the watercourse.
11. No equipment maintenance will be performed within 100-feet of jurisdictional waters, including wetlands and riparian areas, where petroleum products or other pollutants from the equipment may enter these areas. Fueling of equipment will not occur on the project site.
12. Pets on or adjacent to construction sites will not be permitted by the operator.

**Level of Significance after Mitigation: Less than significant.**

BIO-MM-2 requires pre-activity educational meetings, demarcation of the vegetation removal area, and biological monitoring during vegetation removal activities to avoid inadvertent impacts to areas outside of the limits of the vegetation removal area.

**Impact BIO-3:** Special-status vegetation communities in the project area could be impacted by potential short-term, indirect impacts such as the generation of fugitive dust, increased human activity, and the introduction of chemical pollutants.

**BIO-MM-2:** See above.

**BIO-MM-4<sup>3</sup>:** All applicable laws, regulations, safety precautions, and label directions must be followed when performing pest control. All pesticide applications will be performed by a contractor with a valid Qualified Applicator License (QAL) and a valid Pest

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<sup>3</sup> The numbering of the mitigation measures provided in this technical report match the mitigation measure numbering in the Supplemental Environmental Impact Report for the Buena Vista Creek Channel Maintenance Project.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

Control Business License. A licensed Pest Control Adviser (PCA) will be consulted if specific pest control recommendations are required. The timing of any weed control shall be determined for each plant species with the goal of controlling populations before they can reproduce by spreading vegetatively or producing seed.

**Level of Significance after Mitigation:** Less than significant.

BIO-MM-2 limits maintenance vehicle speeds to 15 miles per hour (mph) or less to minimize the generation of fugitive dust that could be generated while maintenance personnel are accessing the project site. Implementation of BIO-MM-2 would minimize the short-term impacts of increased human activity by reviewing and/or designating the vegetation removal area in the field with the contractor to ensure that maintenance workers do not work outside of the removal area. Implementation of BIO-MM-2 will ensure that trash and debris are disposed of properly. To minimize the potential impact from chemical pollutants, BIO-MM-2 would require that temporary structures and storage of construction materials and staging/storage for construction equipment and materials are not be located in jurisdictional waters; hand-held equipment used for maintenance activities that is operated within a jurisdictional waters will be checked and maintained by the operator daily to prevent leaks of oil or other petroleum products; and no equipment maintenance will be performed within or near a jurisdictional waters. Regulated herbicide application (BIO-MM-4) will minimize the potential impacts associated with improper use of herbicides.

**Impact BIO-4:** Potential long-term indirect impacts to special-status vegetation communities from changes in hydrology and hydraulics and introduction of non-native invasive species.

**BIO-MM-1:** See above.

**Level of Significance after Mitigation:** Less than significant

Annual exotics removal (MM-BIO-1) in the entire 11.2-acre project study area will reduce the potential long-term indirect impacts of non-native invasive plant species, which can occur as result of vegetation removal or changes in hydrology and hydraulics, on special-status vegetation communities.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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## **7.2 Special-Status Plants**

Implementation of the proposed project would not result in direct or indirect impacts to special-status plants; therefore, no mitigation is proposed.

## **7.3 Special-Status Wildlife**

This section describes the mitigation measures required for significant impacts to special-status wildlife.

**Impact BIO-5:** Temporary direct impacts to suitable habitat for special-status wildlife within the proposed vegetation removal area.

Direct temporary impacts to special-status wildlife species that breed and/or forage in freshwater marsh due to temporary loss of suitable habitat (Clark's marsh wren (*Cistothorus palustris clarkia*), least bittern (*Ixobrychus exilis*), and northern harrier (*Circus cyaneus*)) or that have the potential to use freshwater marsh (light-footed clapper rail (*Rallus longirostris levipes*)) are considered a significant impact, absent mitigation.

**BIO-MM-1:** See above.

**Level of Significance After Mitigation:** Less than significant.

Enhancement activities will replace the temporal loss of functions and values of suitable habitat for special-status wildlife after implementation of the maintenance activities.

**Impact BIO-6:** Temporary direct impacts to suitable habitat for special-status wildlife outside of the proposed vegetation removal area.

**BIO-MM-2:** See above.

**Level of Significance after Mitigation:** Less than significant.

BIO-MM-2 requires pre-activity educational meetings, demarcation of the vegetation removal area, and biological monitoring during vegetation removal activities to avoid inadvertent impacts to areas outside of the limits of the vegetation removal area.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

**Impact BIO-7:** Special-status wildlife could be impacted by potential short-term, indirect impacts such as the generation of fugitive dust, increased human activity, the introduction of chemical pollutants, noise, and non-native animal species.

**BIO-MM-2:** See above.

**BIO-MM-3:** Maintenance activities shall not occur during the nesting bird season (March 15–September 15).

**Level of Significance after Mitigation:** Less than significant.

BIO-MM-2 limits maintenance vehicle speeds to 15 mph or less to minimize the generation of fugitive dust that could be generated while maintenance personnel are accessing the project site. Implementation of BIO-MM-2 would minimize the short-term impacts of increased human activity by reviewing and/or designating the vegetation removal area in the field with the contractor to ensure that maintenance workers do not work outside of the removal area. Implementation of BIO-MM-2 will ensure that no pets are brought onto the project site and trash and debris are disposed of properly. To minimize the potential impact from chemical pollutants, BIO-MM-2 would require that temporary structures and storage of construction materials and staging/storage for construction equipment and materials are not be located in jurisdictional waters; hand-held equipment used for maintenance activities that is operated within a jurisdictional waters will be checked and maintained by the operator daily to prevent leaks of oil or other petroleum products; and no equipment maintenance will be performed within or near a jurisdictional waters. BIO-MM-3 would minimize short-term indirect impacts from noise on nesting birds by implementing the proposed project outside of the breeding season (March 15 to September 15).

**Impact BIO-8:** Potential long-term indirect impacts to special-status wildlife from changes in hydrology and hydraulics and introduction of non-native invasive species.

**BIO-MM-1:** See above.

**Level of Significance After Mitigation:** Less than significant

Annual exotics removal (MM-BIO-1) in the entire 11.2-acre project study area will reduce the potential long-term indirect impacts of non-native invasive plant species, which can occur as result of vegetation removal or changes in hydrology and hydraulics, on special-status wildlife species.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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## **7.4 Jurisdictional Waters, Including Wetlands**

This section describes the mitigation measures required for impacts to jurisdictional waters, including wetlands.

**Impact BIO-9:** Temporary direct impacts to jurisdictional waters, including wetlands, within the proposed vegetation removal area.

Over a 5-year period, 1.61 acres of waters, including wetlands, under the jurisdiction of the U.S. Army Corps of Engineers (ACOE), Regional Water Quality Control Board (RWQCB), CDFW, and California Coastal Commission (CCC), and an additional 3.47 acres of waters, including wetlands, under the jurisdiction of the ACOE, RWQCB, and CDFW would be maintained.

**BIO-MM-1:** See above.

**BIO-MM-5:** As described in Section 1.1, vegetation is cut at ground level or the water surface and is hauled out of the channel and disposed of appropriately. Therefore, a Clean Water Act, Section 401 and 404 permit issued by the RWQCB and the ACOE is not required for the proposed project because no fill or dredge will occur during the proposed maintenance activities.

To comply with Section 1602 of the Fish and Game Code and California Coastal Act, the following agency permits will be obtained if they are required, or verification that they are not required shall be obtained.

The following permit and agreement shall be obtained:

- A Section 1602 Streambed Alteration Agreement issued by the CDFW for maintenance activities in the streambed.
- Any necessary California Coastal Act permits from the California Coastal Commission, and/or City of Carlsbad. (Note: Based coordination with the CCC (McEachern, pers. comm. 2012), Section 30601.3 of the Coastal Act, authorizes the CCC to process a consolidated coastal development permit application, when requested by the local government and approved by the Executive Director of the CCC, for projects that straddle jurisdictions of the CCC and the local government. The proposed project would typically require coastal development permits from both the CCC and from the City of Carlsbad. As an alternative to pursuing separate coastal permits for the project subject to

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

different standards of review, a consolidated coastal development permit application would be subject to review and approval only by the CCC, with the California Coastal Act providing the standard of review for permit approval, and the City's Local Coastal Plan providing guidance for that review.)

**Impact BIO-10:** Temporary direct impacts to jurisdictional waters, including wetlands, outside of the proposed vegetation removal area.

**BIO-MM-2:** See above.

**Level of Significance after Mitigation:** Less than significant.

BIO-MM-2 requires pre-activity educational meetings, demarcation of the vegetation removal area, and biological monitoring during vegetation removal activities to avoid inadvertent impacts to areas outside of the limits of the vegetation removal area.

**Impact BIO-11:** Jurisdictional waters, including wetlands, in the project area could be impacted by potential short-term, indirect impacts such as the generation of fugitive dust, increased human activity, and the introduction of chemical pollutants.

**BIO-MM-2:** See above.

**BIO-MM-4:** See above.

**Level of Significance after Mitigation:** Less than significant.

BIO-MM-2 limits maintenance vehicle speeds to 15 mph or less to minimize the generation of fugitive dust that could be generated while maintenance personnel are accessing the project site. Implementation of BIO-MM-2 would minimize the short-term impacts of increased human activity by reviewing and/or designating the vegetation removal area in the field with the contractor to ensure that maintenance workers do not work outside of the removal area. Implementation of BIO-MM-2 will ensure that trash and debris are disposed of properly. To minimize the potential impact from chemical pollutants, BIO-MM-2 would require that temporary structures and storage of construction materials and staging/storage for construction equipment and materials are not be located in jurisdictional waters; hand-held equipment used for

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

maintenance activities that is operated within a jurisdictional waters will be checked and maintained by the operator daily to prevent leaks of oil or other petroleum products; and no equipment maintenance will be performed within or near a jurisdictional waters. Regulated herbicide application (BIO-MM-4) will minimize the potential impacts associated with improper use of herbicides.

**Impact BIO-12:** Potential long-term indirect impacts to jurisdictional waters, including wetlands, from changes in hydrology and hydraulics and introduction of non-native invasive species.

**BIO-MM-1:** See above.

**Level of Significance after Mitigation:** Less than significant

Annual exotics removal (MM-BIO-1) in the entire 11.2-acre project study area will reduce the potential long-term indirect impacts of non-native invasive plant species, which can occur as result of vegetation removal or changes in hydrology and hydraulics, on special-status vegetation communities.

## **7.5 Habitat Linkages/Wildlife Corridors**

No mitigation is proposed for impacts to habitat linkages/wildlife corridors because the proposed impacts are not considered significant.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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## **8.0 REFERENCES**

- ACOE (U.S. Army Corps of Engineers). 1987. *Corps of Engineers Wetlands Delineation Manual*. Environmental Laboratory, Wetlands Research Program Technical Report Y-87-1. Vicksburg, Mississippi: U.S. Army Engineer Waterways Experiment Station. January 1987.
- ACOE. 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*. Environmental Laboratory, ERDC/EL TR-08-28. Vicksburg, Mississippi: U.S. Army Engineer Research and Development Center. September 2008. Accessed September 1, 2010. [http://www.usace.army.mil/CECW/Pages/reg\\_supp.aspx](http://www.usace.army.mil/CECW/Pages/reg_supp.aspx).
- ACOE. 2012. "State of California - NWPL Final Draft Ratings." North American Digital Flora: National Wetland Plant List. Version 2.4.0. Prepared (2009) by R.W. Lichvar and J.T. Kartesz. Hanover, New Hampshire: ACOE, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory; and Chapel Hill, North Carolina: The Biota of North America Program (BONAP). Accessed May 14, 2012. [https://wetland\\_plants.usace.army.mil](https://wetland_plants.usace.army.mil).
- ACOE and EPA (U.S. Environmental Protection Agency). 2008. Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapanos v. United States* & *Carabell v. United States*. Washington, D.C.: EPA. December 2, 2008. [http://water.epa.gov/lawsregs/guidance/wetlands/upload/2008\\_12\\_3\\_wetlands\\_CWA\\_Jurisdiction\\_Following\\_Rapanos120208.pdf](http://water.epa.gov/lawsregs/guidance/wetlands/upload/2008_12_3_wetlands_CWA_Jurisdiction_Following_Rapanos120208.pdf).
- AOU (American Ornithologists' Union). 2012. Check-List of North American Birds: List of the 2,078 Bird Species Known From the AOU Check-list Area. <http://www.aou.org/checklist/north/full.php>.
- Beier, P., and S. Loe. 1992. "A Checklist for Evaluating Impacts to Wildlife Movement Corridors." *Wildlife Society Bulletin* 20:434–440.
- Bossard, C.C., J.M. Randall, and M.C. Hoshovsky. 2000. *Invasive Plants of California's Wildlands*. Berkeley, California: University of California Press.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

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- CDFG (California Department of Fish and Game). 2009. "Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities." November 24, 2009. Accessed June 18, 2012.  
[http://www.dfg.ca.gov/wildlife/nongame/survey\\_monitor.html](http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html).
- CDFG. 2010. *List of Vegetation Alliances and Associations: Hierarchical List of Natural Communities with Holland Types*. September 2010. Accessed April 2012.  
<https://nrmsecure.dfg.ca.gov/FileHandler.ashx?DocumentID=24718>.
- CDFG. 2011. *Special Animals List*. California Natural Diversity Database. CDFG, Biogeographic Data Branch. January 2011.  
<http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/SPAnimals.pdf>.
- CDFG. 2012a. California Natural Diversity Database (CNDDDB) *RareFind*. Version 3.1.0. Accessed April 2012.
- CDFG. 2012b. *Special Vascular Plants, Bryophytes, and Lichens List*. California Natural Diversity Database. CDFG, Biogeographic Data Branch. January 2012. Accessed April 2012. [http://www.dfg.ca.gov/biogeodata/cnddb/plants\\_and\\_animals.asp](http://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp).
- CDFG. 2012c. *Natural Communities – Background Information*. Vegetation Classification and Mapping Program. September 2010. Accessed April 2012.  
[http://www.dfg.ca.gov/biogeodata/vegcamp/natural\\_comm\\_background.asp](http://www.dfg.ca.gov/biogeodata/vegcamp/natural_comm_background.asp).
- Chang Consultants. 2012. Hydraulic Analysis. To be prepared for the Buena Vista Channel Maintenance Project.
- City of Carlsbad. 2004. *Habitat Management Plan for Natural Communities in the City of Carlsbad*. Prepared by The Rick Alexander Company, Jean K. Carr Consulting, Onaka Planning and Economics, Ogden Environmental Services, and Dudek and Associates for the City of Carlsbad and U.S. Fish and Wildlife Service/California Department of Fish and Game. Carlsbad, California. December 1999. Final Approval November 2004.  
[http://www.carlsbadca.gov/services/environmental/hmp/docs/Documents/regulatory/hmp/cover\\_tableofcontents.pdf](http://www.carlsbadca.gov/services/environmental/hmp/docs/Documents/regulatory/hmp/cover_tableofcontents.pdf).
- City of Oceanside, Planning Department. 2009. *Final Oceanside Subarea Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP)*.  
<http://www.ci.oceanside.ca.us/civica/filebank/blobdload.asp?BlobID=26057>.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

- CNPS (California Native Plant Society). 2001. "CNPS Botanical Survey Guidelines." In *Inventory of Rare and Endangered Plants of California*, 6th ed., edited by David P. Tibor, 38–40. Sacramento, California: CNPS.
- CNPS. 2012. *Inventory of Rare and Endangered Plants*. Online edition. Version 8-01a. Sacramento, California: CNPS. Accessed April 2012. <http://cnps.site.aplus.net/cgi-bin/inv/inventory.cgi>.
- County of Riverside. 2008. "Least Bell's Vireo." *Understanding the Plants and Animals of the Western Riverside County MSHCP (Multiple Species Habitat Conservation Plan)*. Prepared by Dudek and Associates.
- Crother, B.I., ed. 2008. "Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding." 6<sup>th</sup> ed. Society for the Study of Amphibians and Reptiles. January 2008. Accessed December 14, 2010. [http://ssarherps.org/pdf/HC\\_37\\_6thEd.pdf](http://ssarherps.org/pdf/HC_37_6thEd.pdf).
- Cypher, E.A. 2002. *General Rare Plant Survey Guidelines*. Revised July 2002. [http://www.fws.gov/sacramento/ES/Survey-Protocols-Guidelines/Documents/rare\\_plant\\_protocol.pdf](http://www.fws.gov/sacramento/ES/Survey-Protocols-Guidelines/Documents/rare_plant_protocol.pdf).
- Dudek. 2012. *Focused Least Bell's Vireo and Southwester Willow Flycatcher Survey Report*. Prepared for the Buena Vista Creek Channel Maintenance Project. Carlsbad and Oceanside, California: Dudek. September 2012.
- Haddad, N.M. 1999. "Corridor Use Predicted from Behaviors at Habitat Boundaries." *American Naturalist* 153:215–227.
- Haddad, N.M., and J.J. Tewksbury. 2005. "Impacts of Corridors on Populations and Communities." In *Connectivity Conservation*, edited by K.R. Crooks and M.A. Sanjayan, 390–415. Island Press.
- Holland, R.F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Nongame-Heritage Program, California Department of Fish and Game. October 1986.
- Jepson Flora Project. 2012. *Jepson eFlora*. Berkeley, California: University of California. Accessed May 2, 2012. [http://ucjeps.berkeley.edu/cgi-bin/get\\_JM\\_name\\_data.pl](http://ucjeps.berkeley.edu/cgi-bin/get_JM_name_data.pl)

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

- Konecny Biological Services. 2012. *Results of a Focused Survey for the Light-Footed Clapper Rail at the Buena Vista Creek Channel Maintenance Project Site, Cities of Carlsbad and Oceanside, San Diego County, California, 2012*. Carlsbad and Oceanside, California: Konecny Biological Services. September 2012.
- Lovich, J.E., and J.R. Ennen. 2011. "Wildlife Conservation and Solar Energy Development in the Desert Southwest, United States." *BioScience* 61(12):982–992.
- McEachern, L. 2012. California Coastal Act permitting. Discussion between L. McEachern (California Coastal Commission) and April Winecki (Dudek). March 1, 2012.
- Meese, R.J., F.M. Shilling, and J.F. Quinn. 2007. *Wildlife Crossings Assessment and Mitigation Manual*. U.C. Davis and California Department of Transportation.
- Moyle, P.B. 2002. *Inland Fishes of California*. Berkeley, California: University of California Press.
- NABA (North American Butterfly Association). 2001. "Checklist of North American Butterflies Occurring North of Mexico." *North American Butterfly Association (NABA) Checklist & English Names of North American Butterflies*, edited by B. Cassie, J. Glassberg, A. Swengel, and G. Tudor. 2001. Accessed May 2012.  
<http://www.naba.org/pubs/enames2.html>.
- NatureServe. 2012. *NatureServe Explorer: An Online Encyclopedia of Life*. Arlington, Virginia: NatureServe. Accessed April 2012. <http://www.natureserve.org/explorer/index.htm>.
- NPS (National Park Service). 1997. *A Southwestern Willow Flycatcher Natural History Summary and Survey Protocol*. Prepared by M.K. Sogge, R.M. Marshall, S.J. Sferra, and T.J. Tibbitts. Technical Report NPS/NAUCPRS/NRTR-97/12. NPS, Colorado Plateau Research Station at Northern Arizona University.
- Oberbauer, T., M. Kelly, and J. Buegge. 2008. *Draft Vegetation Communities of San Diego County*. March 2008.
- Rosenberg, D.K., B.R. Noon, and E.C. Meslow. 1995. "Towards a Definition of Biological Corridor." In *Integrating People and Wildlife for a Sustainable Future*, edited by J.A. Bissonette and P.R. Krausman, 436–439. Bethesda, Maryland: Wildlife Society.

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

- Rosenberg, D.K., B.R. Noon, and E.C. Meslow. 1997. "Biological Corridors: Form, Function, and Efficacy." *BioScience* 47:677–687.
- SANDAG (San Diego Association of Governments). 2003. *Final MHCP Plan*. Vol. 1. Prepared for the Multiple Habitat Conservation Program. Administered by SANDAG. March 2003.
- San Diego County Birding. 2012. "San Diego Botanic Gardens Swainson's Hawk, Encinitas." Yahoo Group: San Diego County Birding. Accessed September 6, 2012. <http://groups.yahoo.com/group/SDBIRDS/message/22408>.
- SDNHM (San Diego Natural History Museum). 2012a. Data retrieved from Herbarium and Plant Atlas databases for grid squares R24–R27, S24–S27, T24–T27, and U24–U27. *San Diego County Plant Atlas Project*. Accessed April 2012. <http://www.sdplantatlas.org/publicsearch.aspx>.
- SDNHM. 2012b. Data retrieved for grid squares R24–R27, S24–S27, T24–T27, and U24–U27. *San Diego County Bird Atlas*. Google Earth presentation. Accessed April 2012. <http://www.sdnhm.org/science/birds-and-mammals/projects/san-diego-county-bird-atlas/>.
- SDNHM. 2012c. "Butterflies of San Diego County." San Diego Natural History Museum. Accessed April 2012. <http://www.sdnhm.org/archive/research/entomology/sdbutterflies.html#Metalmarks>.
- Soulé, M.E., and M.E. Gilpin. 1991. "The Theory of Wildlife Corridor Capability." In *Nature Conservation 2: The Role of Corridors*, edited by D.A. Saunders and R.J. Hobbs, 3–8. Chipping Norton, Australia: Surrey Beatty and Sons.
- Unitt, P. 2004. *San Diego County Bird Atlas*. Number 39. In *Proceedings of the San Diego Society of Natural History*. San Diego, California: Ibis Publishing Company.
- USDA (U.S. Department of Agriculture). 1994. "Hydric Soils." Natural Resources Conservation Service. <http://soils.usda.gov/use/hydric/intro.html>.
- USDA. 2012. "California." State PLANTS Checklist. Accessed May 2, 2012. [http://plants.usda.gov/dl\\_state.html](http://plants.usda.gov/dl_state.html).

**DRAFT**  
**Buena Vista Creek Channel Maintenance Project**  
**Biological Resources Technical Report**

---

- USDA and NRCS (Natural Resources Conservation Service) 2010. *Field Indicators of Hydric Soils in the United States. A Guide for Identifying and Delineating Hydric Soils*. Version 7.0. 2010. [ftp://ftp-fc.sc.egov.usda.gov/NSSC/Hydric\\_Soils/FieldIndicators\\_v7.pdf](ftp://ftp-fc.sc.egov.usda.gov/NSSC/Hydric_Soils/FieldIndicators_v7.pdf)
- USDA and NRCS. 2012. Web Soil Survey [web application]. Accessed August 8, 2012. <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>.
- USFWS (United States Fish and Wildlife Service). 2001. *Least Bell's Vireo Survey Guidelines*. January 19. [http://www.fws.gov/ventura/speciesinfo/protocols\\_guidelines/docs/lbv/leastbellsvireo\\_survey-guidelines.pdf](http://www.fws.gov/ventura/speciesinfo/protocols_guidelines/docs/lbv/leastbellsvireo_survey-guidelines.pdf).
- USFWS. 2008. *Birds of Conservation Concern 2008*. Arlington, Virginia: USFWS, Division of Migratory Bird Management. December 2008. Accessed July 26, 2010. <http://www.fws.gov/migratorybirds>.
- USFWS. 2011. "National Wetlands Inventory." U.S. Fish and Wildlife Service. Accessed March 2011. <http://www.fws.gov/wetlands/Data/Mapper.html>.
- USFWS. 2012. "Critical Habitat and Occurrence Data" [map]. Accessed August 2012. <http://www.fws.gov/data>.
- USGS (U.S. Geological Survey). 2010. *A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher*. Techniques and Methods 2A-10. In Book 2, *Collection of Environmental Data*; Section A, Biological Science. Prepared by M.K. Sogge (USGS), D. Ahlers (U.S. Bureau of Reclamation), and S.J. Sferra (U.S. Fish and Wildlife Service). Reston, Virginia: USGS. Accessed November 29, 2011. <http://pubs.usgs.gov/tm/tm2a10/>.
- Western Regional Climate Center. 2012. "Historical Climate Information: Campo." Accessed August 2012: <http://www.wrcc.dri.edu/index.html>.

# **APPENDIX A**

## *Plants Compendium*



## APPENDIX A

### Plants Compendium

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#### VASCULAR SPECIES

#### DICOTS

##### **AIZOACEAE—FIG-MARIGOLD FAMILY**

- \* *Carpobrotus edulis*—hottentot fig

##### **APIACEAE—CARROT FAMILY**

- \* *Apium graveolens*—wild celery
- \* *Conium maculatum*—poison hemlock
- \* *Foeniculum vulgare*—sweet fennel

##### **ASTERACEAE—SUNFLOWER FAMILY**

- Ambrosia psilostachya*—Cuman ragweed
- Artemisia douglasiana*—Douglas' sagewort
- Baccharis pilularis*—coyotebrush
- Baccharis salicifolia* ssp. *salicifolia*—mulefat
- Erigeron canadensis*—Canadian horseweed
- \* *Glebionis coronaria*—crowndaisy
- \* *Helminthotheca echioides*—bristly oxtongue
- Isocoma menziesii*—Menzies' goldenbush
- Jaumea carnosa*—marsh jaumea
- \* *Sonchus oleraceus*—common sowthistle

##### **BRASSICACEAE—MUSTARD FAMILY**

- \* *Lepidium draba*—whitetop
- \* *Raphanus sativus*—cultivated radish

##### **CHENOPODIACEAE—GOOSEFOOT FAMILY**

- Atriplex lentiformis*—big saltbush
- \* *Atriplex prostrata*—triangle orache
- Chenopodium californicum*—California goosefoot
- Salicornia pacifica*—Pacific swampfire

##### **FABACEAE—LEGUME FAMILY**

- \* *Melilotus indicus*—annual yellow sweetclover

##### **FRANKENIACEAE—FRANKENIA FAMILY**

- Frankenia salina*—alkali seaheath

## APPENDIX A (Continued)

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### **ONAGRACEAE—EVENING PRIMROSE FAMILY**

*Oenothera elata* ssp. *hirsutissima*—Hooker's evening primrose

### **POLYGONACEAE—BUCKWHEAT FAMILY**

\* *Rumex crispus*—curly dock

### **SALICACEAE—WILLOW FAMILY**

*Salix exigua*—narrowleaf willow

*Salix gooddingii*—Goodding's willow

*Salix lasiolepis*—arroyo willow

### **SIMAROUBACEAE—QUASSIA OR SIMAROUBA FAMILY**

\* *Ailanthus altissima*—tree of heaven

### **SOLANACEAE—NIGHTSHADE FAMILY**

\* *Nicotiana glauca*—tree tobacco

### **TROPAEOLACEAE—NASTURTIUM FAMILY**

\* *Tropaeolum majus*—nasturtium

### **URTICACEAE—NETTLE FAMILY**

*Urtica dioica*—stinging nettle

## MONOCOTS

### **CYPERACEAE—SEDGE FAMILY**

*Schoenoplectus americanus*—chairmaker's bulrush

### **POACEAE—GRASS FAMILY**

\* *Bromus diandrus*—ripgut brome

\* *Bromus madritensis*—compact brome

\* *Polypogon monspeliensis*—annual rabbitsfoot grass

*Distichlis spicata*—saltgrass

### **TYPHACEAE—CATTAIL FAMILY**

*Typha latifolia*—broadleaf cattail

\* signifies introduced (non-native) species

# **APPENDIX B**

## *Wildlife Compendium*



## APPENDIX B

### Wildlife Compendium

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#### BIRD

##### BLACKBIRDS, ORIOLES AND ALLIES

###### **ICTERIDAE—BLACKBIRDS**

- \* *Molothrus ater*—Brown-headed cowbird

##### BUSHTITS

###### **AEGITHALIDAE—LONG-TAILED TITS AND BUSHTITS**

- Psaltiriparus minimus*—Bushtit

##### CARDINALS, GROSBEAKS AND ALLIES

###### **CARDINALIDAE—CARDINALS AND ALLIES**

- Pheucticus melanocephalus*—Black-headed grosbeak

##### EMBERIZINES

###### **EMBERIZIDAE—EMBERIZIDS**

- Melospiza melodia*—Song sparrow  
*Melospiza crissalis*—California towhee  
*Pipilo maculatus*—Spotted towhee

##### FINCHES

###### **FRINGILLIDAE—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES**

- Carpodacus mexicanus*—House finch  
*Spinus psaltria*—Lesser goldfinch  
*Spinus tristis*—American goldfinch

##### FLYCATCHERS

###### **TYRANNIDAE—TYRANT FLYCATCHERS**

- Empidonax difficilis*—Pacific-slope flycatcher  
*Myiarchus cinerascens*—Ash-throated flycatcher  
*Sayornis nigricans*—Black phoebe  
*Tyrannus vociferans*—Cassin's kingbird

## APPENDIX B (Continued)

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### HAWKS

#### **ACCIPITRIDAE—HAWKS, KITES, EAGLES, AND ALLIES**

- Buteo jamaicensis*—Red-tailed hawk
- Buteo lineatus*—Red-shouldered hawk
- Elanus leucurus*—White-tailed kite

### HERONS AND BITTERNS

#### **ARDEIDAE—HERONS, BITTERNS, AND ALLIES**

- Ardea alba*—Great egret
- Ardea herodias*—Great blue heron
- Butorides virescens*—Green heron
- Nycticorax nycticorax*—Black-crowned night-heron

### HUMMINGBIRDS

#### **TROCHILIDAE—HUMMINGBIRDS**

- Archilochus alexandri*—Black-chinned hummingbird
- Calypte anna*—Anna's hummingbird
- Selasphorus sasin*—Allen's hummingbird

### JAYS, MAGPIES AND CROWS

#### **CORVIDAE—CROWS AND JAYS**

- Apelocoma californica*—Western scrub-jay
- Corvus brachyrhynchos*—American crow
- Corvus corax*—Common raven

### MOCKINGBIRDS AND THRASHERS

#### **MIMIDAE—MOCKINGBIRDS AND THRASHERS**

- Mimus polyglottos*—Northern mockingbird

### PIGEONS AND DOVES

#### **COLUMBIDAE—PIGEONS AND DOVES**

- Zenaida macroura*—Mourning dove
- \* *Columba livia*—Rock pigeon (rock dove)

## APPENDIX B (Continued)

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### SHOREBIRDS

#### **CHARADRIIDAE—LAPWINGS AND PLOVERS**

*Charadrius vociferus*—Killdeer

### STARLINGS AND ALLIES

#### **STURNIDAE—STARLINGS**

\* *Sturnus vulgaris*—European starling

### SWALLOWS

#### **HIRUNDINIDAE—SWALLOWS**

*Petrochelidon pyrrhonota*—Cliff swallow

*Stelgidopteryx serripennis*—Northern rough-winged swallow

### TERNS AND GULLS

#### **LARIDAE—GULLS, TERNS, AND SKIMMERS**

*Larus occidentalis*—Western gull

### VIREOS

#### **VIREONIDAE—VIREOS**

*Vireo bellii pusillus*—Least Bell's vireo

*Vireo plumbeus*—Plumbeous vireo

### WATERFOWL

#### **ANATIDAE—DUCKS, GEESE, AND SWANS**

*Anas platyrhynchos*—Mallard

### WOOD WARBLERS AND ALLIES

#### **PARULIDAE—WOOD-WARBLERS**

*Cardellina pusilla*—Wilson's warbler

*Geothlypis trichas*—Common yellowthroat

*Oreothlypis celata*—Orange-crowned warbler

*Setophaga occidentalis*—Hermit warbler

*Setophaga petechia*—Yellow warbler

## APPENDIX B (Continued)

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### WOODPECKERS

#### **PICIDAE—WOODPECKERS AND ALLIES**

*Colaptes auratus*—Northern flicker

*Picoides nuttallii*—Nuttall's woodpecker

### WRENS

#### **TROGLODYTIDAE—WRENS**

*Cistothorus palustris clarkae*—Clark's Marsh wren

*Thryomanes bewickii*—Bewick's wren

*Troglodytes aedon*—House wren

### INVERTEBRATE

### BUTTERFLIES

#### **NYMPHALIDAE—BRUSH-FOOTED BUTTERFLIES**

*Danaus plexippus*—Monarch

*Limenitis lorquini*—Lorquin's admiral

*Nymphalis antiopa*—Mourning cloak

#### **HESPERIIDAE—SKIPPERS**

*Hylephila phyleus*—Fiery skipper

#### **PAPILIONIDAE—SWALLOWTAILS**

*Papilio rutulus*—Western tiger swallowtail

#### **PIERIDAE—WHITES AND SULFURS**

*Colias eurytheme*—Orange sulphur

*Phoebis sennae*—Cloudless sulphur

### MAMMAL

### CANIDS

#### **CANIDAE—WOLVES AND FOXES**

*Canis latrans*—Coyote

## APPENDIX B (Continued)

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### MUSTELIDS

#### ***MUSTELIDAE*—WEASELS, SKUNKS, AND OTTERS**

*Mustela frenata*—Long-tailed weasel

### SQUIRRELS

#### ***SCIURIDAE*—SQUIRRELS**

*Spermophilus* (Otospermophilus) *beecheyi*—California ground squirrel

### REPTILE

### LIZARDS

#### ***PHRYNOSOMATIDAE*—IGUANID LIZARDS**

*Sceloporus occidentalis*—Western fence lizard

*Uta stansburiana*—Common side-blotched lizard

\* signifies introduced (non-native) species

## APPENDIX B (Continued)

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## **APPENDIX C**

*Focused Least Bell's Vireo and Southwestern  
Willow Flycatcher Survey Report for the Buena  
Vista Creek Channel Maintenance Project,  
Carlsbad, California*



September 20, 2012

7177-03

U.S. Fish and Wildlife Service  
Attn: Recovery Permit Coordinator  
6010 Hidden Valley Road, Suite 100  
Carlsbad, California 92011

***Subject: Focused Least Bell's Vireo and Southwestern Willow Flycatcher  
Survey Report for the Buena Vista Creek Channel Maintenance Project,  
Carlsbad, California***

Dear Recovery Permit Coordinator:

This report documents the results of eight protocol-level presence/absence surveys for the state- and federally listed endangered least Bell's vireo (*Vireo bellii pusillus*), and the state- and federally listed endangered southwestern willow flycatcher (*Empidonax traillii extimus*). These focused surveys included approximately 11.3 acres of creek channel and associated upland areas that contain small patches of suitable habitat for least Bell's vireo and southwestern willow flycatcher within the site. The 11.3 acres composes the project study area. The surveys were conducted in all areas of suitable least Bell's vireo and southwestern willow flycatcher habitat.

The southwestern willow flycatcher and least Bell's vireo are closely associated with riparian habitats, especially densely vegetated willow scrub and riparian forest vegetation. These species are threatened primarily by loss, degradation, and fragmentation of riparian habitats. They also are impacted by brown-headed cowbird (*Molothrus ater*) nest parasitism.

## **LOCATION AND EXISTING CONDITIONS**

The approximately 11.3-acre project study area is situated within the City of Carlsbad, San Diego County, California (Figure 1) and lies within the U.S. Geological Survey (USGS) 7.5-minute map, San Luis Rey Quadrangle: Section 30, Township 11 South, Range 4 Wes (Figure 2); Principal Meridian: San Bernardino; latitude 33.179146 N and longitude -117.340357 W to latitude 33.180475 N and longitude -117.328974 W. The property is situated between sea level and approximately 20 feet (6 meters) above mean sea level (amsl) in elevation. The site is relatively flat, with gently sloping terrain, but does not support much diversity in the topography of the land. The western portion of the site is at sea level and the topography increases in elevation to the north and the south. The Buena Vista Creek channel serves as a flood control channel and is riprap-sided with a natural bottom. Since the channel was completed, the north

half of the channel has been dredged twice—once in 1993 and again in 1997. In 2003, the City of Carlsbad implemented a maintenance program that included removal of 50% of the vegetation on the northern half of the channel between the South Vista Way bridge and the coastal zone, over a 5-year period (i.e., one-tenth of the channel each year). Clearing activities include hand removal of the vegetation within the channel. Permits for these activities expire in 2013. Currently, the channel contains a dense, mature riparian corridor on the south, unmaintained portion of the channel that occurs along the bottom of the slopes.

## VEGETATION COMMUNITIES

The six native vegetation communities on site are Diegan coastal sage scrub, mulefat scrub, southern willow scrub, freshwater marsh, southern coastal saltmarsh, and open water. The non-native, vegetation communities and land cover types (non-vegetated areas) occurring within the project study area are ornamental and disturbed land. The acreages of each vegetation community are presented in Table 1, and their spatial distribution is presented on Figure 3.

**Table 1**  
**Vegetation Communities and Land Covers**

Habitat Types/Vegetation Communities	Code <sup>1</sup>	Existing Acreage <sup>2</sup>
<i>Upland Scrub</i>		
Diegan coastal sage scrub	32500	0.03
	<i>Subtotal</i>	<i>0.03</i>
<i>Riparian/Water and Wetlands</i>		
Mulefat scrub	63310	0.6
Southern willow scrub	63320	4.0
Freshwater Marsh	52400	5.9
Southern Coastal Saltmarsh	52120	0.1
	<i>Subtotal</i>	<i>10.6</i>
<i>Unvegetated Waters</i>		
Open Water	64100	0.3
	<i>Subtotal</i>	<i>0.3</i>
<i>Non-Natural Land Covers</i>		
Disturbed Habitat	11300	0.2
Ornamental	12000	0.03
	<i>Subtotal</i>	<i>0.23</i>
	<b>Total</b>	<b>11.3</b>

<sup>1</sup>Holland (1986) as modified by Oberbauer et al. (2008).

<sup>2</sup>Totals may not add due to rounding.

The vegetation communities that are potentially suitable habitat for the southwestern willow flycatcher and least Bell's vireo are mulefat scrub and southern willow scrub, both of which are described below.

### **Mulefat Scrub**

Mulefat scrub is a successional herbaceous riparian plant community dominated by mulefat (*Baccharis salicifolia* ssp. *salicifolia*) and may also contain various willows (*Salix* spp.), stinging nettle (*Urtica dioica* ssp. *holosericea*), and Santa Barbara sedge (*Carex barbara*) at low percent covers (Holland 1986). This community is commonly found along intermittent stream channels, canyons, and catchment basins.

On site, this community is dominated by monotypic stands of mulefat and occurs in isolated patches along the northern and southern boundaries of the site (Figure 3).

### **Southern Willow Scrub**

Southern willow scrub is a relatively dense, broad-leafed, deciduous riparian thicket dominated by several willow species (*Salix gooddingii*, *S. lasiolepis*, *S. laevigata*, *S. lasiandra*). Emergent trees such as Fremont's cottonwood (*Populus fremontii* ssp. *fremontii*) and California sycamore (*Platanus racemosa*) may also be present at a low cover, and due to the dense shrub canopy cover, the understory is sparse. This community is commonly found along intermittent stream channels and creeks that contain loose, sandy, or fine gravelly alluvial soils (Holland 1986).

On site, this community predominately occurs within the central and upstream portions of the site, predominantly on the southern half of the channel (Figure 3). Southern willow scrub on site is the co-dominant by narrowleaf willow (*Salix exigua*), Goodding's willow (*Salix gooddingii*), and arroyo willow (*Salix lasiolepis*). The understory is sparse and no emergent trees are present.

## **METHODS**

Focused surveys for the least Bell's vireo and southwestern willow flycatcher were conducted for the project on April 19 and 30, May 15 and 25, June 6 and 21, and July 5 and 16, 2012, by Anita M. Hayworth, PhD. Approximately 3,600 linear feet (0.68 linear mile) of Buena Vista Creek were covered and included the entire width of the creek; however, not all of this reach contains suitable habitat for these species. The creek varies in width from 80 to 175 feet.

Dr. Hayworth holds a federal permit, TE-781084, and state Memorandum of Understanding to conduct surveys for the southwestern willow flycatcher. A federal recovery permit is not

required to conduct surveys for the least Bell's vireo. Dr. Hayworth simultaneously focused her survey efforts on the southwestern willow flycatcher and least Bell's vireo.

For the least Bell's vireo, eight site visits were conducted with approximately 10-day intervals between visits, following the currently accepted U.S. Fish and Wildlife Service (USFWS) protocol (USFWS 2001). The site visits are conducted 10 days apart to maximize the detection of early and late arrivals, females, non-vocal birds, and nesting pairs. Surveys were conducted between dawn and 11:00 a.m. and were not conducted during periods of excessive or abnormal cold, heat, wind, rain, or other inclement weather. Surveys were conducted between April 10 and July 31, as dictated in the protocol.

For the southwestern willow flycatcher, five surveys are required per the A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher issued by USGS and U.S. Department of the Interior and approved by the USFWS (Sogge et al. 2010). For the 2010 protocol, five survey visits are required with one visit between May 15 and May 31, two visits between June 1 and June 24, and two visits between June 25 and July 17 (Sogge et al. 2010). Each survey visit was separated by at least five days. Because the habitat requirements for the two species overlap, surveys conducted between May 15 and July 17 include surveys for both species. A tape of recorded southwestern willow flycatcher vocalizations was used approximately every 50 to 100 feet within suitable habitat to induce southwestern willow flycatcher responses. When a southwestern willow flycatcher was detected, playing of the tape ceased to avoid harassment. Various subspecies of this species are not easily differentiated visually or by call or song in the field, and any resident willow flycatchers observed in the final survey period were assumed to be the "southwestern" subspecies. Nonresident willow flycatchers (those not observed during the third survey period) were assumed to be migrant willow flycatchers or to not breed within the study area.

The survey method consisted of slowly walking a systematic, meandering transect within and adjacent to all suitable habitat (i.e., southern willow scrub and mulefat scrub) in the study area on both north and south sides of the creek channel. This route was arranged to cover all suitable habitat on site. A vegetation map (scale 1 inch = 200 feet) of the survey area was available to record any detected southwestern willow flycatcher or least Bell's vireo. Binoculars (10×50) were used to aid in detecting and identifying wildlife species.

Weather conditions, time of day, and season were appropriate for the detection of southwestern willow flycatcher and least Bell's vireo (Table 2).

**Table 2**  
**Schedule of Surveys**

Date	Hours	Focus	Personnel	Conditions
4/19/12	0645–1015	LBVI	AMH	overcast; 1–3 mph winds; 53°F–61°F
4/30/12	0615–0930	LBVI	AMH	overcast; 1–3 mph winds; 58°F–63°F
5/15/12	0610–0905	WIFL/LBVI	AMH	0% cloud cover; 1–3 mph winds; 57°F–63°F
5/25/12	0605–0948	WIFL/LBVI	AMH	overcast; 0–2 mph winds; 57°F–60°F
6/6/12	0600–1030	WIFL/LBVI	AMH	0% cloud cover; 1–3 mph winds; 57°F–63°F
6/21/12	0630–1030	WIFL/LBVI	AMH	overcast; 0–1 mph winds; 61°F–65°F
7/5/12	0620–1015	WIFL/LBVI	AMH	overcast; 0–1 mph winds; 61°F–73°F
7/16/12	0600–0930	WIFL/LBVI	AMH	overcast to 0% cloud cover; 1–3 mph winds; 59°F–63°F

Survey Focus Designations: LBVI: least Bell's vireo; WIFL: willow flycatcher

Personnel Key: AMH: Anita M. Hayworth

## RESULTS

The state- and federally listed endangered least Bell's vireo was identified in riparian vegetation in the study area during the 2012 focused surveys. No state-listed willow flycatchers were identified in riparian vegetation during the 2012 focused surveys. Least Bell's vireo was documented during all survey visits. In total during the surveys, one pair and one male were mapped in southern willow scrub-dominated vegetation along the Buena Vista Creek channel within the project study area (Figure 3). Another pair was observed during the survey on May 15 only. They were confirmed as unique from the single male and the eastern pair by the detection of the other vireos at the same time.

The pair of vireos was observed in the easternmost portion of the creek channel. The pair was observed foraging with a juvenile. One juvenile was confirmed, however others could have been present and not been detected due to the density of vegetation.

The single male was observed during most surveys. He was never observed with a female. He was observed actively singing during all surveys and was observed frequently in the willow patch at the western end of the study area (approximately 800 feet from the western boundary). He was also observed much farther east, up to the location of the tributary drainage that enters into the Buena Vista Creek channel from under State Route 78 (Figure 3). Distinguishing this individual from the eastern-most pair was accomplished by hearing both males sing at the same time.

A total of 47 bird species were detected in the study area during general and focused surveys of the site (Appendix A). Common bird species observed include marsh wrens (*Cistothorus palustris*),

*Recovery Permit Coordinator*

*Subject: Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report for the Buena Vista Creek Channel Maintenance Project, Carlsbad, California*

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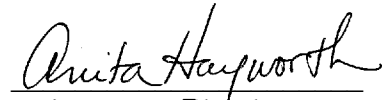
Anna's hummingbird (*Calypte anna*), house finches (*Carpodacus mexicanus*), and lesser goldfinches (*Spinus psaltria*).

The Willow Flycatcher Survey and Detection Form (Sogge et al. 2010) was filled out for each visit and is included in Appendix B. Site photographs are included in Appendix C.

Please feel free to contact me at 760.479.4239 with questions or if you require additional information.

I certify that the information in this survey report and attached exhibits fully and accurately represent my work.

Sincerely,



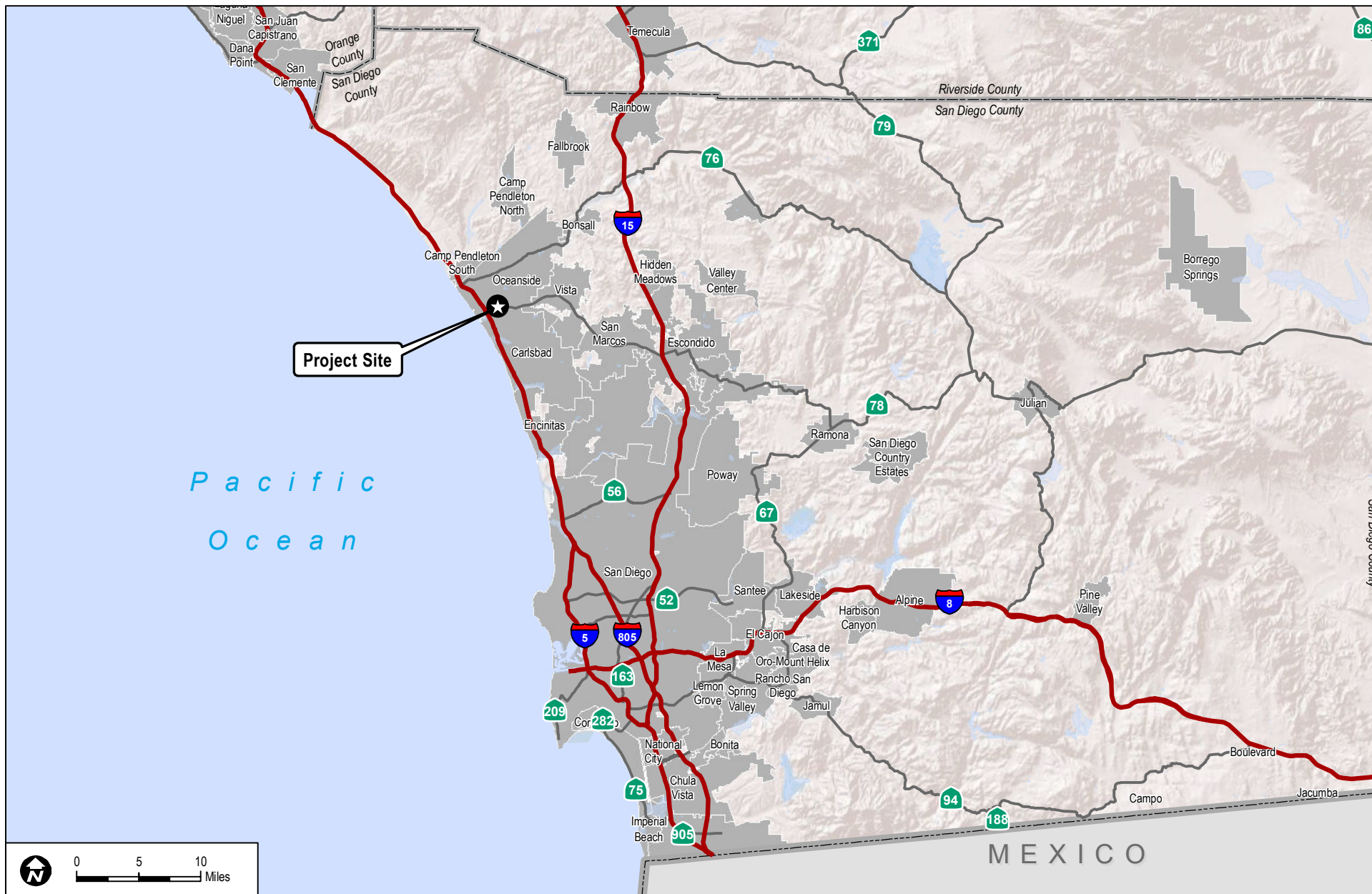
Anita Hayworth, PhD  
Senior Biologist

Att: Figures 1–3  
Appendices A–C

cc: Megan Enright, Dudek  
Sherri Howard, City of Carlsbad

## REFERENCES

- Holland, R.F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Nongame-Heritage Program, California Department of Fish and Game. October 1986.
- Oberbauer, T., M. Kelly, and J. Buegge. 2008. *Draft Vegetation Communities of San Diego County*. March 2008.
- Sogge, M.K., D. Ahlers, and S.J. Sferra. 2010. *A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher*. U.S. Geological Survey Techniques and Methods 2A-10.
- USFWS (U.S. Fish and Wildlife Service). 2001. *Least Bell's Vireo Survey Guidelines*. Ecological Services, Carlsbad Fish and Wildlife Office. January 19, 2001.

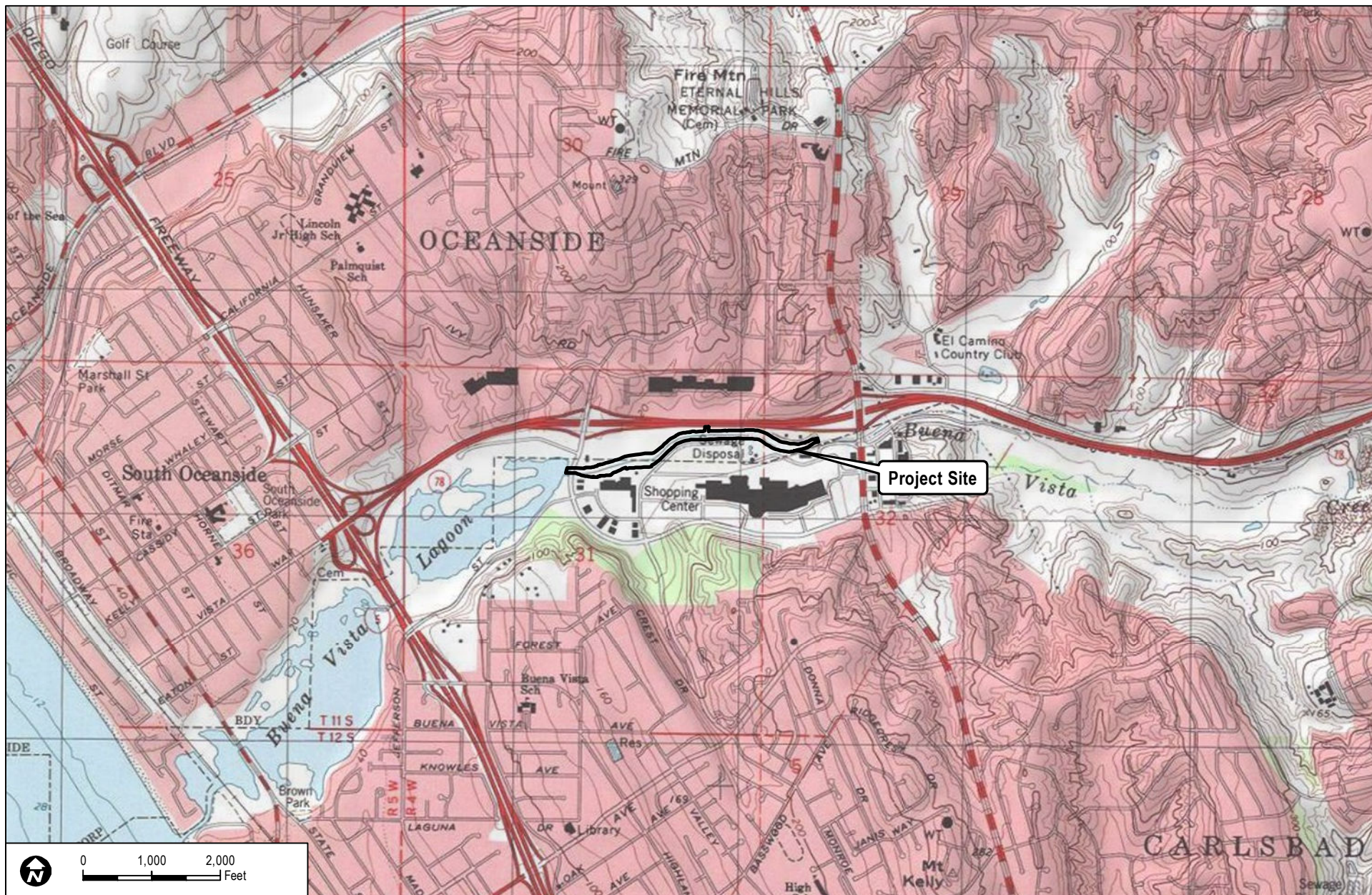


**FIGURE 1**  
**Regional Map**

BUENA VISTA CREEK CHANNEL MAINTENANCE PROJECT - FOCUSED LEAST BELL'S VIREO AND SOUTHWESTERN WILLOW FLYCATCHER SURVEY REPORT

**DUDEK**

7123



**DUDEK**

7358

SOURCE: USGS 7.5-Minute Series San Luis Rey Quadrangle.

**FIGURE 2**

**Vicinity Map**

BUENA VISTA CREEK CHANNEL MAINTENANCE PROJECT - FOCUSED LEAST BELL'S VIREO AND SOUTHWESTERN WILLOW FLYCATCHER SURVEY REPORT



0 150 300 Feet

DUDEK

7177

SOURCE: Bing Maps

BUENA VISTA CREEK CHANNEL MAINTENANCE PROJECT - FOCUSED LEAST BELL'S VIREO AND SOUTHWESTERN WILLOW FLYCATCHER SURVEY REPORT

Project Boundary

survey\_routes

Special-status species

Least Bell's vireo

Vegetation Communities

CSM, Southern Coastal Saltmarsh

CSS, Diegan Coastal Sage Scrub

DH, Disturbed Habitat

FWM, Freshwater Marsh

MFS, Mulefat Scrub

ORN, Ornamental

OW, Open Water

SWS, Southern Willow Scrub

FIGURE 3  
Biological Resources Route Map



# **APPENDIX A**

*Wildlife Species Observed on the Project Site*



## **APPENDIX A**

### **Wildlife Species Observed on the Project Site**

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#### **BIRD**

##### **BLACKBIRDS, ORIOLES AND ALLIES**

###### ***ICTERIDAE*—BLACKBIRDS**

- \* *Molothrus ater*—Brown-headed cowbird

##### **BUSHTITS**

###### ***AEGITHALIDAE*—LONG-TAILED TITS AND BUSHTITS**

- Psaltiriparus minimus*—Bushtit

##### **CARDINALS, GROSBEAKS, AND ALLIES**

###### ***CARDINALIDAE*—CARDINALS AND ALLIES**

- Pheucticus melanocephalus*—Black-headed grosbeak

##### **EMBERIZINES**

###### ***EMBERIZIDAE*—EMBERIZIDS**

- Melospiza melodia*—Song sparrow  
*Melospiza crissalis*—California towhee  
*Pipilo maculatus*—Spotted towhee

##### **FINCHES**

###### ***FRINGILLIDAE*—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES**

- Carpodacus mexicanus*—House finch  
*Spinus psaltria*—Lesser goldfinch  
*Spinus tristis*—American goldfinch

##### **FLYCATCHERS**

###### ***TYRANNIDAE*—TYRANT FLYCATCHERS**

- Myiarchus cinerascens*—Ash-throated flycatcher  
*Sayornis nigricans*—Black phoebe  
*Tyrannus vociferans*—Cassin's kingbird  
*Empidonax difficilis*—Pacific-slope flycatcher

## APPENDIX A (Continued)

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### HAWKS

#### **ACCIPITRIDAE—HAWKS, KITES, EAGLES, AND ALLIES**

- Buteo jamaicensis*—Red-tailed hawk
- Buteo lineatus*—Red-shouldered hawk
- Elanus leucurus*—White-tailed kite

### HERONS AND BITTERNS

#### **ARDEIDAE—HERONS, BITTERNS, AND ALLIES**

- Ardea alba*—Great egret
- Ardea herodias*—Great blue heron
- Butorides virescens*—Green heron
- Nycticorax nycticorax*—Black-crowned night-heron

### HUMMINGBIRDS

#### **TROCHILIDAE—HUMMINGBIRDS**

- Archilochus alexandri*—Black-chinned hummingbird
- Calypte anna*—Anna's hummingbird
- Selasphorus sasin*—Allen's hummingbird

### JAYS, MAGPIES, AND CROWS

#### **CORVIDAE—CROWS AND JAYS**

- Apelocoma californica*—Western scrub-jay
- Corvus brachyrhynchos*—American crow
- Corvus corax*—Common raven

### MOCKINGBIRDS AND THRASHERS

#### **MIMIDAE—MOCKINGBIRDS AND THRASHERS**

- Mimus polyglottos*—Northern mockingbird

### PIGEONS AND DOVES

#### **COLUMBIDAE—PIGEONS AND DOVES**

- Zenaida macroura*—Mourning dove
- \* *Columba livia*—Rock pigeon (rock dove)

## APPENDIX A (Continued)

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### SHOREBIRDS

#### **CHARADRIIDAE—LAPWINGS AND PLOVERS**

*Charadrius vociferus*—Killdeer

### STARLINGS AND ALLIES

#### **STURNIDAE—STARLINGS**

\* *Sturnus vulgaris*—European starling

### SWALLOWS

#### **HIRUNDINIDAE—SWALLOWS**

*Petrochelidon pyrrhonota*—Cliff swallow

*Stelgidopteryx serripennis*—Northern rough-winged swallow

### TERNS AND GULLS

#### **LARIDAE—GULLS, TERNS, AND SKIMMERS**

*Larus occidentalis*—Western gull

### VIREOS

#### **VIREONIDAE—VIREOS**

*Vireo bellii pusillus*—Least Bell's vireo

*Vireo plumbeus*—Plumbeous vireo

### WATERFOWL

#### **ANATIDAE—DUCKS, GEESE, AND SWANS**

*Anas platyrhynchos*—Mallard

### WOOD WARBLERS AND ALLIES

#### **PARULIDAE—WOOD-WARBLERS**

*Geothlypis trichas*—Common yellowthroat

*Setophaga occidentalis*—Hermit warbler

*Oreothlypis celata*—Orange-crowned warbler

*Cardellina pusilla*—Wilson's warbler

*Setophaga petechia*—Yellow warbler

## APPENDIX A (Continued)

---

### WOODPECKERS

#### **PICIDAE—WOODPECKERS AND ALLIES**

*Picoides nuttallii*—Nuttall's woodpecker

*Colaptes auratus*—Northern flicker

### WRENS

#### **TROGLODYTIDAE—WRENS**

*Cistothorus palustris clarkae*—Clark's marsh wren

*Thryomanes bewickii*—Bewick's wren

*Troglodytes aedon*—House wren

### INVERTEBRATE

### BUTTERFLIES

#### **NYMPHALIDAE—BRUSH-FOOTED BUTTERFLIES**

*Danaus plexippus*—Monarch

*Limenitis lorquini*—Lorquin's admiral

*Nymphalis antiopa*—Mourning cloak

#### **HESPERIIDAE—SKIPPERS**

*Hylephila phyleus*—Fiery skipper

#### **PAPILIONIDAE—SWALLOWTAILS**

*Papilio rutulus*—Western tiger swallowtail

#### **PIERIDAE—WHITES AND SULFURS**

*Colias eurytheme*—Orange sulphur

*Phoebis sennae*—Cloudless sulphur

### MAMMAL

### CANIDS

#### **CANIDAE—WOLVES AND FOXES**

*Canis latrans*—Coyote

## APPENDIX A (Continued)

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### MUSTELIDS

#### ***MUSTELIDAE*—WEASELS, SKUNKS, AND OTTERS**

*Mustela frenata*—Long-tailed weasel

### SQUIRRELS

#### ***SCIURIDAE*—SQUIRRELS**

*Spermophilus (Otospermophilus) beecheyi*—California ground squirrel

### REPTILE

### LIZARDS

#### ***PHRYNOSOMATIDAE*—IGUANID LIZARDS**

*Sceloporus occidentalis*—Western fence lizard

*Uta stansburiana*—Common side-blotched lizard

\* signifies introduced (non-native) species

## APPENDIX A (Continued)

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# **APPENDIX B**

## ***Willow Flycatcher Survey and Detection Form***



# Willow Flycatcher (WIFL) Survey and Detection Form (revised April, 2010)

Site Name: Buena Vista Creek Channel Maint. Project State: CA County: San Diego  
 USGS Quad Name: San Luis Rey Elevation: 6 (meters)  
 Creek, River, or Lake Name: Buena Vista Creek

*Is copy of USGS map marked with survey area and WIFL sightings attached (as required)?* Yes X No     

Survey Coordinates: Start: E 468,270 N 3,671,199 UTM Datum: NAD 83 (See instructions)  
 Stop: E 469,331 N 3,671,343 UTM Zone: 11

If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.

**\*\*Fill in additional site information on back of this page\*\***

Survey # Observer(s) (Full Name)	Date (m/d/y) Survey Time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N  If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs or breeding; potential threats [livestock, cowbirds, <i>Diorhabda</i> spp.]). If <i>Diorhabda</i> found, contact USFWS and State WIFL coordinator.	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
							# Birds	Sex	UTM E	UTM N
<b>Survey # 1</b> Observer(s): Hayworth	Date: 5/15/2012	0	0	0	n	No cowbirds observed				
	Start: 6:10									
	Stop: 9:05									
	Total hrs: 3.0									
<b>Survey # 2</b> Observer(s): Hayworth	Date: 6/6/2012	0	0	0	n	2 pair brown-headed cowbirds observed in western most area.				
	Start: 6:00									
	Stop: 10:30									
	Total hrs: 4.5									
<b>Survey # 3</b> Observer(s): Hayworth	Date: 6/21/2012	0	0	0	n	1 pair brown-headed cowbirds observed in western area				
	Start: 6:30									
	Stop: 10:30									
	Total hrs: 4.0									
<b>Survey # 4</b> Observer(s): Hayworth	Date: 7/5/2012	0	0	0	n	3 pair brown-headed cowbirds observed in eastern end and 2 pair observed in western end				
	Start: 6:20									
	Stop: 10:15									
	Total hrs: 4.0									
<b>Survey # 5</b> Observer(s): Hayworth	Date: 7/16/2012	0	0	0	n	2 pair brown-headed cowbirds observed in western most area.				
	Start: 6:00									
	Stop: 9:30									
	Total hrs: 3.5									
<b>Overall Site Summary</b> Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestlings, and fledglings. Be careful not to double count individuals. Total survey hrs: <span style="border: 1px solid black; padding: 2px;">19.0</span>		Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any WIFLs color-banded? Yes <u>    </u> No <u>x</u>  If yes, report color combination(s) in the comments section on back of form and report to USFWS.				
		0	0	0	0					

Reporting Individual: Anita Hayworth Date Report Completed: 8/30/2012  
 US Fish & Wildlife Service Permit #: TE-781084 State Wildlife Agency Permit #: SCP

**Submit form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.**

Fill in the following information completely. Submit form by September 1<sup>st</sup>. Retain a copy for your records.

Reporting Individual Anita Hayworth Phone # 760-479-4239  
Affiliation Dudek E-mail ahayworth@dudek.com  
Site Name Buena Vista Creek Channel Maint. Project Date report Completed 8/30/2012  
Was this site surveyed in a previous year? Yes \_\_\_ No x Unknown \_\_\_  
Did you verify that this site name is consistent with that used in previous yrs? Yes \_\_\_ No \_\_\_ Not Applicable x  
If name is different, what name(s) was used in the past? \_\_\_  
If site was surveyed last year, did you survey the same general area this year? Yes \_\_\_ No \_\_\_ If no, summarize below.  
Did you survey the same general area during each visit to this site this year? Yes x No \_\_\_ If no, summarize below.  
Management Authority for Survey Area: Federal \_\_\_ Municipal/County x State \_\_\_ Tribal \_\_\_ Private \_\_\_  
Name of Management Entity or Owner (e.g., Tonto National Forest) City of Carlsbad

Length of area surveyed: 1.1 (km)

Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer at this site:

x Native broadleaf plants (entirely or almost entirely, > 90% native)  
Mixed native and exotic plants (mostly native, 50 - 90% native)  
Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)  
Exotic/introduced plants (entirely or almost entirely, > 90% exotic)

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific name.

Salix Gooddingii, Salix lasiolepis, Salix Laevigata

Average height of canopy (Do not include a range): 7.6 (meters)

Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections;  
2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or their nests;  
3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features in Comments.

Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sites, unique habitat features.  
Attach additional sheets if necessary.

survey was in conjunction with survey for least Bell's vireo. Additional visit made during first survey period on 5/25/2012 from 0605-0948. No willow flycatcher observed. Creek consists of small patches of southern willow scrub habitat intermixed with large areas of freshwater marsh. total acreage of southern willow scrub is 4.0 acres within the 11.3 acre study area.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary

# **APPENDIX C**

## *Site Photos*



## APPENDIX C

### Site Photos

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Photo 1. Overall view of the survey area.



Photo 2. Exterior view of a representative patch within the survey area.

## APPENDIX C (Continued)

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Photo 3. Interior view of a representative patch within the survey area.

## **APPENDIX D**

*Results of a Focused Survey for the Light-Footed  
Clapper Rail at the Buena Vista Creek Channel  
Maintenance Project Site, Cities of Carlsbad and  
Oceanside, San Diego County, California 2012*



# Konecny Biological Services

Biological Consulting, Research, Conservation

September 3, 2012

US Fish and Wildlife Service  
Attn: Recovery Permit Coordinator  
6010 Hidden Valley Road, Suite 100  
Carlsbad, CA 92011

**Re: Results of a Focused Survey for the Light-footed Clapper Rail at the Buena Vista Creek Channel Maintenance Project Site, Cities of Carlsbad and Oceanside, San Diego County, California, 2012.**

Dear Recovery Permit Coordinator:

This letter report presents the results of a focused survey for the light-footed clapper rail (*Rallus longirostris levipes*) at the Buena Vista Creek Channel Maintenance Project site in the Cities of Carlsbad and Oceanside, north-coastal San Diego County, California. The light-footed clapper rail is listed as an endangered species by the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG).

Surveys for the light-footed clapper rail were conducted by wildlife biologist Mr. John Konecny. The surveys were conducted in accordance with the recommendations provided to the USFWS by the Clapper Rail Study Team (2009). This activity is authorized by Konecny Biological Services's (KBS) USFWS section 10(a) permit number TE837308-5, and a CDFG Memorandum of Understanding.

## INTRODUCTION

The light-footed clapper rail is a slender, tawny-breasted bird with grayish edges on brown centered back feathers, olive wing coverts, vertical white bars on the flanks, a white stripe over the eye, and a partially orange bill. Light-footed clapper rail occurred historically along the coast of southern California from Carpinteria Marsh in Santa Barbara County south to San Quintín, Baja California, Mexico (Grinnell and Miller 1944, USFWS 1994).

The light-footed clapper rail is a permanent resident of coastal salt marsh traversed by tidal sloughs, usually characterized by cordgrass (*Spartina foliosa*) and pickleweed (*Salicornia* spp.) (Grinnell and Miller 1944, USFWS 1994). Light-footed clapper rails have also nested in freshwater marsh characterized by cattails (*Typha* sp.) and bulrush (*Scirpus* sp.) at Buena Vista, Agua Hedionda, Batiquitos, San Elijo, and San Dieguito Lagoons in San Diego County (Zembal *et al* 2011); and in spiny rush (*Juncus acutus*) at Naval Air Station (NAS) Point Mugu. There is very limited evidence for inter-marsh movement by light-footed clapper rails.

Light-footed clapper rails forage primarily on crustaceans when present. They will also feed on mollusks, small fish, aquatic insects, grasshoppers, small vertebrates, and in some cases, seeds (Eddleman and Conway 1998). Clapper rails forage within emergent vegetation or along the ecotone between mudflats and marsh (Zembal and Fancher 1988). Light-footed clapper rails forage for crabs in the central drains of tidal creeks at low tide. Surface gleaning and shallow probing compose approximately 90% of foraging time. They very irregularly probe deep into the substrate (Zembal and Fancher 1988).

Populations of light-footed clapper rails have undergone decline in the United States due to the rail's limited distribution and destruction and degradation of coastal salt marsh habitat. The statewide light-

footed clapper rail population in 2011 was reported to be 441 pairs in 21 marshes (Zemba *et al* 2011), and represents the second highest count since the statewide census began in 1980. The 2011 total is 17 % higher than the 2010 count, and is only two pairs lower than the all time high count in 2007. Fifty-six percent of these pairs were found in two coastal salt marsh complexes at Upper Newport Bay and the Tijuana Marsh National Wildlife Refuge (NWR). Five other marshes at NAS Point Mugu, Batiquitos Lagoon, San Elijo Lagoon, Seal Beach NWR, and Kendall-Frost Marsh in Mission Bay, had between 15 and 43 pairs, representing an additional 34% of the state total. The remaining 12 marshes had between one and seven pairs.

Zemba and Massey (1986) have shown that paired light-footed clapper rails can be detected “clapping” throughout the year, but have a bimodal peak in vocalizing during mid-February to mid-April and again in September to October. The initial peak in vocalizing corresponds to the onset of breeding season. In contrast to “clapping”, single male and female “kekking” is highly seasonal, almost exclusively occurring between February and June.

## PROJECT LOCATION

The Buena Vista Channel Maintenance Project site is located just north of Buena Vista Creek, south of State Route 78, and between the Jefferson Street Bridge and South Vista Way Bridge in the Cities of Carlsbad and Oceanside California (Figure 1). The light-footed clapper rail survey area is bounded on the west side by Jefferson Street and continues eastward for approximately 2,750-feet (838-meters) to South Vista Way. Specifically, the Buena Vista Creek Channel Maintenance Project site is located within Township 11 South, Range 4 West, and in Section 32 of the U.S. Geological Survey San Luis Rey 7.5-minute quadrangle.

## PROJECT SITE DESCRIPTION

Buena Vista Lagoon proper is located immediately west of the Jefferson Street Bridge. A shopping center borders the entire south side of Buena Vista Creek and is separated from the Creek by a wire fence. A pump station is present in the northwest corner of the site. There is a strip mall in the northeast corner of the site and the eastern terminus is the South Vista Way Bridge.

This reach of Buena Vista Creek is primarily freshwater marsh characterized by cattails (*Typha* sp.) with smaller pockets of embedded bulrush (*Scirpus* sp.). Mule-fat scrub characterized by mule-fat (*Baccharis salicifolia*), and southern willow scrub characterized by arroyo willow are also scattered throughout the reach. The Creek transitions eastward into dense southern willow scrub. A thin band of Diegan coastal sage scrub is present between Buena Vista Creek proper and the disturbed upland. Elevation of the survey area is approximately zero to 20 feet (8 meters) above mean sea level.

## METHODS

Six focused light-footed clapper rail survey events were conducted at least seven days apart over the entire 2,750-foot reach of Buena Vista Creek between March 30<sup>th</sup> and May 16<sup>th</sup>, 2012. Dawn surveys were conducted on April 8<sup>th</sup>, May 2<sup>nd</sup>, and May 16<sup>th</sup>. Dusk surveys were conducted on March 30<sup>th</sup>, April 22<sup>nd</sup>, and May 9<sup>th</sup>. Each survey lasted approximately three and one-half hours. The surveys were conducted in accordance with the recommendations provided to the USFWS by the Clapper Rail Study Team (2009). A summary of the environmental conditions on the six survey dates is provided in Table 1 below.

**Table 1. Summary of Weather Conditions During Six Light-footed Clapper Rail Surveys for the Buena Vista Creek Channel Maintenance Project Site, Cities of Carlsbad and Oceanside, California, 2012.**

Survey #	Date	Surveyor (Species)*	Time	Weather Conditions
1	03/30/2012	JK (LFCR)	1610-1950	10% overcast, 65-61°F, wind 7-10 mph
2	04/08/2012	JK (LFCR)	0640-1025	100% overcast, 56-60°F, wind 1-3 mph
3	04/22/2012	JK, (LFCR)	1645-2050	20% overcast, 60-57°F, wind 7-12 mph
4	05/02/2012	JK (LFCR)	0625-1000	100% overcast, 61-64°F, wind 5-7 mph
5	05/09/2012	JK (LFCR)	1650-2030	40% overcast, 69-64°F, wind 5-10 mph
6	05/16/2012	JK (LFCR)	0610-1000	100% overcast, 58-61°F, wind 7-10 mph

\* JK-John Konecny; LFCR-Light-footed Clapper Rail

The surveys were conducted by walking the south side of Buena Vista Creek and stopping at stations approximately 100-feet (30-meters) apart and listening for vocalizing light-footed clapper rails. If rails were not detected passively, a digital call-prompt of the light-footed clapper rail “dueting” was played with an iPod and amplified speakers at 30-second intervals. A response was listened for approximately ten minutes before proceeding to the next survey station.

## RESULTS and DISCUSSION

No light-footed clapper rails were detected during the six focused surveys in 2012. Fifty-six species of birds were detected (Table 2).

Described as “formerly common in all coastal marshes” by Grinnell and Miller (1944), the light-footed clapper rail has never been a common bird species at nearby Buena Vista Lagoon. Since the light-footed clapper rail range-wide survey was initiated in 1980, light-footed clapper rails were not detected at Buena Vista Lagoon until 1991 when two pairs were present. The subpopulation continued to increase in size with the high total of nine pairs being present in 2008 and 2009. Six pairs were detected in 2010. Three pairs were detected in Buena Vista in 2011, the lowest number since 2001.

The light-footed clapper rail will likely continue to inhabit the freshwater marsh at Buena Vista Lagoon and the numbers may continue to fluctuate depending on the reproductive success of the pairs that were identified in 2011. Because of its close proximity to Buena Vista Lagoon and contiguity with the Lagoon habitat, the freshwater marsh of Buena Vista Creek east of Jefferson Street may be refugia for dispersing light-footed clapper rails, or if the subpopulation continues to grow may be an expanded breeding area.

## CERTIFICATION

I certify that the information in this survey report and attached exhibits fully and accurately represent my work. The results of focused surveys for listed species are typically considered valid for one year by the USFWS and CDFG. If you have any questions or require additional information, please call me at (760) 489-5276.

Sincerely,



John K. Konecny  
Wildlife Biologist

TE837308-5

**REFERENCES CITED**

- Clapper Rail Study Team. 2009. Survey Guidelines to Determine Presence/Absence of the Light-footed Clapper Rail in Southern California; Recommendations of the Clapper Rail Study Team (John Konecny, Richard Zembal, Susan Hoffman). Draft Recommendations Provided to the Fish and Wildlife Service. 2pp.
- Eddleman, W.R., and C.J. Conway. 1998. Clapper Rail (*Rallus longirostris*). In *The Birds of North America*, No.340 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA. 32 pp.
- Grinnell, J., and A.H. Miller. 1944. *The Distribution of the Birds of California*. Cooper Ornithological Club. Berkeley, California.
- U.S. Fish and Wildlife Service. 1994. Light-footed Clapper Rail. Unpublished two-page pamphlet, prepared by R. Zembal.
- Zembal, R., S. Hoffman, and J. Konecny. 2011. Status and Distribution of the Light-footed Clapper Rail in California, 2011 Season. Report to California Department of Fish and Game, for the Clapper Rail Recovery Fund. 20pp.
- Zembal, R. and B. W. Massey. 1986. Seasonality of Vocalizations by Light-footed Clapper Rails. *J. Field Ornithol.*, 58(1):41-48.



**Figure 1.** Location of the Light-footed Clapper Rail Survey Area (red polygon) for the Buena Vista Creek Channel Maintenance Project, Cities of Carlsbad and Oceanside, San Diego County, California, 2012.

**Table 2. Bird Species Detected During Six Surveys of at the Buena Vista Creek Channel Maintenance Project Site, San Diego County, 2012.**

**Class Aves**

Family Anatidae	
Mallard	<i>Anas platyrhynchos</i>
Family Phasianidae	
California Quail	<i>Callipepla californica</i>
Family Phalacrocoracidae	
Double-crested Cormorant	<i>Phalacrocorax auritus</i>
Family Ardeidae	
Great Blue Heron	<i>Ardea herodias</i>
Cattle Egret	<i>Bubulcus ibis</i>
Green Heron	<i>Butorides virescens</i>
Family Accipitridae	
Red-tailed Hawk	<i>Buteo jamaicensis</i>
White-tailed kite	<i>Elanus leucurus</i>
Red-shouldered Hawk	<i>Buteo lineatus</i>
Family Falconidae	
American Kestrel	<i>Falco sparverius</i>
Family Charadriidae	
Killdeer	<i>Charadrius vociferus</i>
Family Laridae	
Ring-billed Gull	<i>Larus delawarensis</i>
Western Gull	<i>Larus occidentalis</i>
Forster's Tern	<i>Sterna forsteri</i>
Family Columbidae	
Mourning Dove	<i>Zenaida macroura</i>
Rock Pigeon	<i>Columba livia</i>
Family Apodidae	
White-throated Swift	<i>Aeronautes saxatalis</i>
Family Trochilidae	
Anna's Hummingbird	<i>Calypte anna</i>
Family Picidae	
Nuttall's Woodpecker	<i>Picoides nuttallii</i>
Northern Flicker	<i>Colaptes auratus</i>
Downey Woodpecker	<i>Picoides pubescens</i>
Family Tyrannidae	
Western Wood Pewee	<i>Contopus sordidulus</i>

Ash-throated Flycatcher	<i>Myriarchus cinerascens</i>
Black Phoebe	<i>Sayornis nigricans</i>
Cassin's Kingbird	<i>Tyrannus vociferus</i>
Family Vireonidae	
Warbling Vireo	<i>Vireo gilvus</i>
Family Corvidae	
Western Scrub Jay	<i>Aphelocoma coerulescen</i>
Common Raven	<i>Corvus corax</i>
American Crow	<i>Corvus brachyrhynchos</i>
Family Hirundinidae	
Northern Rough-winged Swal	<i>Stelgidopteryx serripennis</i>
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>
Family Aegithalidae	
Common Bushtit	<i>Psaltiparus minimus</i>
Family Troglodytidae	
Bewick's Wren	<i>Thryomanes bewickii</i>
House Wren	<i>Troglodytes aedon</i>
Marsh Wren	<i>Cistothorus palustris</i>
Family Sylviidae	
Wrentit	<i>Chamea fasciata</i>
Family Sturnidae	
European Starling	<i>Sturnus vulgaris</i>
Family Mimidae	
Northern Mockingbird	<i>Mimus polyglottos</i>
Family Parulidae	
Common Yellowthroat	<i>Geothlypis trichas</i>
Orange-crowned Warbler	<i>Vermivora celata</i>
Yellow Warbler	<i>Dendroica petechia</i>
Wilson's Warbler	<i>Wilsonia pusilla</i>
Family Emberizidae	
Spotted Towhee	<i>Pipilo maculatus</i>
California Towhee	<i>Pipilo crassalis</i>
Song Sparrow	<i>Melospiza melodia</i>
Family Cardinalidae	
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>
Blue Grosbeak	<i>Passerina caerulea</i>
Family Icteridae	
Red-winged Blackbird	<i>Agelaius phoeniceus</i>
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>

Brown-headed Cowbird  
Bullock's Oriole  
Western Meadowlark

*Molothrus ater*  
*Icterus bullockii*  
*Sturnella neglecta*

Family Fringillidae

Lesser Goldfinch  
House Finch

*Carduelis psaltria*  
*Carpodacus mexicanus*

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# **APPENDIX E**

## *Data Station Forms*



# WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Buena Vista Creek City/County: Carlsbad/San Diego County Sampling Date: 3/21/11  
 Applicant/Owner: City of Carlsbad State: CA Sampling Point: DS-1  
 Investigator(s): Callie Ford and Patricia Schuyler Section, Township, Range: Section 30, T11S, R4W  
 Landform (hillslope, terrace, etc.): Bank Local relief (concave, convex, none): None Slope (%): 1  
 Subregion (LRR): C - Mediterranean California Lat: 33 10 50.47 Long: 117 19 37.92 Datum: \_\_\_\_\_  
 Soil Map Unit Name: Salinas Clay Loam NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ Soil ☒ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☒  
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="radio"/>	No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>			
Wetland Hydrology Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>			
Remarks: The data station is within a highly disturbed portion of the channel supported by riprap slopes. Thus, vegetation is considered problematic. However, because the point tested positive for hydric soils and hydrology, and because other test pits downstream of DS-1 tested positive for hydrophytic vegetation, this area still meets the definition of an ACOE wetland.					

## VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:			
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)			
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)			
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0 %</u> (A/B)			
4. _____	_____	_____	_____				
Total Cover: _____ %							
<u>Sapling/Shrub Stratum</u>				<b>Prevalence Index worksheet:</b>			
1. <i>Eriogonum fasciculatum</i>	<u>2</u>	<u>No</u>	<u>Not Listed</u>	Total % Cover of:		Multiply by:	
2. <i>Ambrosia psilostachya</i>	<u>30</u>	<u>Yes</u>	<u>FACU</u>	OBL species	<u>_____</u>	x 1 =	<u>0</u>
3. <i>Artemisia douglasiana</i>	<u>10</u>	<u>No</u>	<u>FAC</u>	FACW species	<u>30</u>	x 2 =	<u>60</u>
4. _____	_____	_____	_____	FAC species	<u>10</u>	x 3 =	<u>30</u>
5. _____	_____	_____	_____	FACU species	<u>30</u>	x 4 =	<u>120</u>
Total Cover: <u>42 %</u>				UPL species	<u>2</u>	x 5 =	<u>10</u>
<u>Herb Stratum</u>				Column Totals:	<u>72</u> (A)		<u>220</u> (B)
1. <i>Oenothera elata ssp. hirsutissima</i>	<u>30</u>	<u>Yes</u>	<u>FACW</u>	Prevalence Index = B/A = <u>3.06</u>			
2. <i>Brassica nigra</i>	<u>&lt;1</u>	<u>No</u>	<u>Not Listed</u>				
3. _____	_____	_____	_____				
4. _____	_____	_____	_____				
5. _____	_____	_____	_____				
6. _____	_____	_____	_____				
7. _____	_____	_____	_____				
8. _____	_____	_____	_____				
Total Cover: <u>30 %</u>							
<u>Woody Vine Stratum</u>				<b>Hydrophytic Vegetation Indicators:</b>			
1. _____	_____	_____	_____	<input checked="" type="checkbox"/> Dominance Test is >50%			
2. _____	_____	_____	_____	<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>			
				<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)			
				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)			
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.			
				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
% Bare Ground in Herb Stratum <u>15 %</u> % Cover of Biotic Crust _____ % Remarks: _____							

## SOIL

Sampling Point: DS-1**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features			Loc <sup>2</sup>	Texture <sup>3</sup>	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>			
0-4	10 YR 3/2	100					clay loam	
4 (refusal)	riprap	100					rock	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix.    <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix.<sup>3</sup>Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)           |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)       |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)   |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)   |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input type="checkbox"/> Depleted Matrix (F3)       |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input type="checkbox"/> Redox Dark Surface (F6)    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)     |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |   |

**Indicators for Problematic Hydric Soils:<sup>4</sup>**

- ☐ 1 cm Muck (A9) (**LRR C**)  
☐ 2 cm Muck (A10) (**LRR B**)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>4</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes ☒    No ☐

Remarks: Assumed to be hydric soils below riprap and because flooding likely occurs within this area for a long duration during the growing season. Soils considered significantly disturbed due to the placement of riprap over the soils.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                                    | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                                 | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input type="checkbox"/> Saturation (A3)                                       | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )               | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> )         | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input checked="" type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> ) | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                              | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)             | <input type="checkbox"/> Other (Explain in Remarks)                    |
| <input checked="" type="checkbox"/> Water-Stained Leaves (B9)                  |  |

**Secondary Indicators (2 or more required)**

- ☐ Water Marks (B1) (**Riverine**)  
☐ Sediment Deposits (B2) (**Riverine**)  
☐ Drift Deposits (B3) (**Riverine**)  
☐ Drainage Patterns (B10)  
☐ Dry-Season Water Table (C2)  
☐ Thin Muck Surface (C7)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☐ FAC-Neutral Test (D5)

**Field Observations:**Surface Water Present?    Yes ☐    No ☒    Depth (inches): \_\_\_\_\_Water Table Present?    Yes ☐    No ☒    Depth (inches): \_\_\_\_\_Saturation Present?    Yes ☐    No ☒    Depth (inches): \_\_\_\_\_  
(includes capillary fringe)**Wetland Hydrology Present?**    Yes ☒    No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

# WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Buena Vista Creek City/County: Carlsbad/San Diego County Sampling Date: 3/21/11  
 Applicant/Owner: City of Carlsbad State: CA Sampling Point: DS-2  
 Investigator(s): Callie Ford and Patricia Schuyler Section, Township, Range: Section 30, T11S, R4W  
 Landform (hillslope, terrace, etc.): Bank Local relief (concave, convex, none): None Slope (%): 0-1  
 Subregion (LRR): C - Mediterranean California Lat: 33 10 50.47 Long: 117 19 37.92 Datum: \_\_\_\_\_  
 Soil Map Unit Name: Salinas clay loam NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ Soil ☒ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☒  
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>	Is the Sampled Area within a Wetland?	Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>		
Wetland Hydrology Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>		
Remarks: <u>Data station taken in mulefat scrub above OHWM.</u>				

## VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:			
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)			
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)			
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0 %</u> (A/B)			
4. _____	_____	_____	_____				
Total Cover: _____ %							
<u>Sapling/Shrub Stratum</u>				<b>Prevalence Index worksheet:</b>			
1. <u>Baccharis salicifolia</u>	<u>35</u>	<u>Yes</u>	<u>FAC</u>	Total % Cover of:		Multiply by:	
2. <u>Heterotheca grandiflora</u>	<u>5</u>	<u>No</u>	<u>Not Listed</u>	OBL species	<u>      </u>	x 1 =	<u>0</u>
3. <u>Artemisia douglasiana</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>	FACW species	<u>      </u>	x 2 =	<u>0</u>
4. _____	_____	_____	_____	FAC species	<u>65</u>	x 3 =	<u>195</u>
5. _____	_____	_____	_____	FACU species	<u>      </u>	x 4 =	<u>0</u>
Total Cover: <u>70 %</u>				UPL species	<u>8</u>	x 5 =	<u>40</u>
<u>Herb Stratum</u>				Column Totals:	<u>73</u>	(A)	<u>235</u> (B)
1. <u>Gnaphalium californica</u>	<u>3</u>	<u>No</u>	<u>Not Listed</u>	Prevalence Index = B/A = <u>3.22</u>			
2. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b>			
3. _____	_____	_____	_____	<input checked="" type="checkbox"/> Dominance Test is >50%			
4. _____	_____	_____	_____	<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>			
5. _____	_____	_____	_____	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)			
6. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)			
7. _____	_____	_____	_____				
8. _____	_____	_____	_____				
Total Cover: <u>3 %</u>							
<u>Woody Vine Stratum</u>				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.			
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b>			
2. _____	_____	_____	_____	Yes <input checked="" type="radio"/> No <input type="radio"/>			
Total Cover: _____ %							
% Bare Ground in Herb Stratum <u>25 %</u>		% Cover of Biotic Crust _____ %					

Remarks:

## SOIL

Sampling Point: DS-2**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features			Loc <sup>2</sup>	Texture <sup>3</sup>	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>			
0-4	10 YR 4/2	100					clay loam	
4	riprap	100					rock	Refusal at 4"

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix. <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix.<sup>3</sup>Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)           |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)       |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)   |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)   |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input type="checkbox"/> Depleted Matrix (F3)       |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input type="checkbox"/> Redox Dark Surface (F6)    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)     |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |   |

**Indicators for Problematic Hydric Soils:<sup>4</sup>**

- ☐ 1 cm Muck (A9) (**LRR C**)  
☐ 2 cm Muck (A10) (**LRR B**)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>4</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

**Hydric Soil Present?** Yes ☐ No ☒

Remarks: Data station taken in soil above riprap.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                            | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                         | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input type="checkbox"/> Saturation (A3)                               | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )       | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> ) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )    | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Other (Explain in Remarks)                    |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     |  |

**Secondary Indicators (2 or more required)**

- ☐ Water Marks (B1) (**Riverine**)  
☐ Sediment Deposits (B2) (**Riverine**)  
☐ Drift Deposits (B3) (**Riverine**)  
☐ Drainage Patterns (B10)  
☐ Dry-Season Water Table (C2)  
☐ Thin Muck Surface (C7)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☐ FAC-Neutral Test (D5)

**Field Observations:**Surface Water Present? Yes ☐ No ☒

Depth (inches): \_\_\_\_\_

Water Table Present? Yes ☐ No ☒

Depth (inches): \_\_\_\_\_

Saturation Present? Yes ☐ No ☒  
(includes capillary fringe)

Depth (inches): \_\_\_\_\_

**Wetland Hydrology Present?** Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: None. Data station above and outside of the OHWM.

# WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Buena Vista Creek City/County: Carlsbad/San Diego County Sampling Date: 3/21/11  
 Applicant/Owner: City of Carlsbad State: CA Sampling Point: DS-3  
 Investigator(s): Callie Ford and Patricia Schuyler Section, Township, Range: Section 30, T11S, R4W  
 Landform (hillslope, terrace, etc.): Bank Local relief (concave, convex, none): None Slope (%): 1  
 Subregion (LRR): C - Mediterranean California Lat: 33 10 50.47 Long: 117 19 37.92 Datum: \_\_\_\_\_  
 Soil Map Unit Name: Salinas clay loam NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: <u>Data station taken 3' above OHWM.</u>			

## VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total Cover: _____ %			
<u>Sapling/Shrub Stratum</u>			
1. <u>Baccharis pilularis</u>	<u>10</u>	<u>No</u>	<u>Not Listed</u>
2. <u>Artemisia douglasiana</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total Cover: <u>50</u> %			
<u>Herb Stratum</u>			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
Total Cover: _____ %			
<u>Woody Vine Stratum</u>			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
Total Cover: _____ %			
% Bare Ground in Herb Stratum <u>30</u> %	% Cover of Biotic Crust _____ %		

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 1 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

**Prevalence Index worksheet:**  

Total % Cover of:	Multiply by:
OBL species _____	x 1 = <u>0</u>
FACW species _____	x 2 = <u>0</u>
FAC species <u>40</u>	x 3 = <u>120</u>
FACU species _____	x 4 = <u>0</u>
UPL species <u>10</u>	x 5 = <u>50</u>
Column Totals: <u>50</u> (A)	<u>170</u> (B)
Prevalence Index = B/A = <u>3.40</u>	

**Hydrophytic Vegetation Indicators:**  
☒ Dominance Test is >50%  
☒ Prevalence Index is ≤3.0<sup>1</sup>  
☐ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present.

**Hydrophytic Vegetation Present?** Yes ☒ No ☐

Remarks: \_\_\_\_\_

## SOIL

Sampling Point: DS-3**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features			Loc <sup>2</sup>	Texture <sup>3</sup>	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>			
0-3	10 YR 4/2	99	7.5 YR 5/8	1			clay loam	
3-9	10 YR 4/2	100					clay loam	
9	riprap						rock	Refusal at 9"

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix. <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix.<sup>3</sup>Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                           | <input type="checkbox"/> Sandy Redox (S5)           |
| <input type="checkbox"/> Histic Epipedon (A2)                    | <input type="checkbox"/> Stripped Matrix (S6)       |
| <input type="checkbox"/> Black Histic (A3)                       | <input type="checkbox"/> Loamy Mucky Mineral (F1)   |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)   |
| <input type="checkbox"/> Stratified Layers (A5) ( <b>LRR C</b> ) | <input type="checkbox"/> Depleted Matrix (F3)       |
| <input type="checkbox"/> 1 cm Muck (A9) ( <b>LRR D</b> )         | <input type="checkbox"/> Redox Dark Surface (F6)    |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)       | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12)                | <input type="checkbox"/> Redox Depressions (F8)     |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)                | <input type="checkbox"/> Vernal Pools (F9)          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                |   |

**Indicators for Problematic Hydric Soils:<sup>4</sup>**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

<sup>4</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

**Hydric Soil Present?** Yes ☐ No ☒

Remarks: Data station taken in soil above riprap.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                            | <input type="checkbox"/> Salt Crust (B11)                              |
| <input type="checkbox"/> High Water Table (A2)                         | <input type="checkbox"/> Biotic Crust (B12)                            |
| <input type="checkbox"/> Saturation (A3)                               | <input type="checkbox"/> Aquatic Invertebrates (B13)                   |
| <input type="checkbox"/> Water Marks (B1) ( <b>Nonriverine</b> )       | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2) ( <b>Nonriverine</b> ) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) ( <b>Nonriverine</b> )    | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Surface Soil Cracks (B6)                      | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)     | <input type="checkbox"/> Other (Explain in Remarks)                    |
| <input type="checkbox"/> Water-Stained Leaves (B9)                     |  |

**Secondary Indicators (2 or more required)**

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)**Wetland Hydrology Present?** Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No signs of hydrology.

# WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Buena Vista Creek City/County: Carlsbad/San Diego County Sampling Date: 3/21/11  
 Applicant/Owner: City of Carlsbad State: CA Sampling Point: DS-4  
 Investigator(s): Callie Ford and Patricia Schuyler Section, Township, Range: Section 30, T11S, R4W  
 Landform (hillslope, terrace, etc.): Bank Local relief (concave, convex, none): None Slope (%): 0  
 Subregion (LRR): C - Mediterranean California Lat: 33 10 50.47 Long: 117 19 37.92 Datum: \_\_\_\_\_  
 Soil Map Unit Name: Salinas clay loam NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="radio"/>	No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>			
Wetland Hydrology Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>			
Remarks: <u>Data station taken below OHWM, but above current water table within coastal southern marsh.</u>					

## VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:			
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)			
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)			
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0 %</u> (A/B)			
4. _____	_____	_____	_____	Total Cover: <u>_____</u> %			
<u>Sapling/Shrub Stratum</u>				<b>Prevalence Index worksheet:</b>			
1. <u>Salicornia (=Sarcocornia) pacifica</u>	<u>40</u>	<u>Yes</u>	<u>OBL</u>	Total % Cover of:		Multiply by:	
2. _____	_____	_____	_____	OBL species	<u>40</u>	x 1 =	<u>40</u>
3. _____	_____	_____	_____	FACW species	_____	x 2 =	<u>0</u>
4. _____	_____	_____	_____	FAC species	<u>10</u>	x 3 =	<u>30</u>
5. _____	_____	_____	_____	FACU species	_____	x 4 =	<u>0</u>
Total Cover: <u>40 %</u>				UPL species	<u>10</u>	x 5 =	<u>50</u>
<u>Herb Stratum</u>				Column Totals:	<u>60</u>	(A)	<u>120</u> (B)
1. <u>Distichlis spicata</u>	<u>10</u>	<u>No</u>	<u>FAC</u>	Prevalence Index = B/A = <u>2.00</u>			
2. <u>Brassica nigra</u>	<u>10</u>	<u>No</u>	<u>Not Listed</u>	<b>Hydrophytic Vegetation Indicators:</b>			
3. _____	_____	_____	_____	<input checked="" type="checkbox"/> Dominance Test is >50%			
4. _____	_____	_____	_____	<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>			
5. _____	_____	_____	_____	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)			
6. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)			
7. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present.			
8. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b>			
Total Cover: <u>20 %</u>				Yes <input checked="" type="radio"/> No <input type="radio"/>			
<u>Woody Vine Stratum</u>							
1. _____	_____	_____	_____				
2. _____	_____	_____	_____				
Total Cover: <u>_____</u> %							
% Bare Ground in Herb Stratum <u>40 %</u>		% Cover of Biotic Crust <u>_____</u> %					

Remarks:

## SOIL

Sampling Point: DS-4**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features			Loc <sup>2</sup>	Texture <sup>3</sup>	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>			
0-12			2.5 YR 6/3	30				hard clay nugget in matrix
0-12	10 YR 4/2	65	10 YR 6/8	5			clay loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix. <sup>2</sup>Location: PL=Pore Lining, RC=Root Channel, M=Matrix.<sup>3</sup>Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☐ Hydrogen Sulfide (A4)  
☐ Stratified Layers (A5) (**LRR C**)  
☐ 1 cm Muck (A9) (**LRR D**)  
☐ Depleted Below Dark Surface (A11)  
☐ Thick Dark Surface (A12)  
☐ Sandy Mucky Mineral (S1)  
☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)  
☐ Loamy Mucky Mineral (F1)  
☐ Loamy Gleyed Matrix (F2)  
☒ Depleted Matrix (F3)  
☐ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox Depressions (F8)  
☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils:<sup>4</sup>**

- ☐ 1 cm Muck (A9) (**LRR C**)  
☐ 2 cm Muck (A10) (**LRR B**)  
☐ Reduced Vertic (F18)  
☐ Red Parent Material (TF2)  
☐ Other (Explain in Remarks)

<sup>4</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

**Hydric Soil Present?** Yes ☒ No ☐

Remarks: \_\_\_\_\_

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)  
☐ High Water Table (A2)  
☐ Saturation (A3)  
☐ Water Marks (B1) (**Nonriverine**)  
☐ Sediment Deposits (B2) (**Nonriverine**)  
☒ Drift Deposits (B3) (**Nonriverine**)  
☐ Surface Soil Cracks (B6)  
☐ Inundation Visible on Aerial Imagery (B7)  
☒ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)  
☐ Biotic Crust (B12)  
☐ Aquatic Invertebrates (B13)  
☐ Hydrogen Sulfide Odor (C1)  
☐ Oxidized Rhizospheres along Living Roots (C3)  
☐ Presence of Reduced Iron (C4)  
☐ Recent Iron Reduction in Plowed Soils (C6)  
☐ Other (Explain in Remarks)

**Secondary Indicators (2 or more required)**

- ☐ Water Marks (B1) (**Riverine**)  
☐ Sediment Deposits (B2) (**Riverine**)  
☐ Drift Deposits (B3) (**Riverine**)  
☐ Drainage Patterns (B10)  
☐ Dry-Season Water Table (C2)  
☐ Thin Muck Surface (C7)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Shallow Aquitard (D3)  
☐ FAC-Neutral Test (D5)

**Field Observations:**Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)**Wetland Hydrology Present?** Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: \_\_\_\_\_

Remarks: \_\_\_\_\_

# **APPENDIX F**

*Special-Status Plant Species Detected or Moderate  
to High Potential to Occur on the Project Site*



## APPENDIX F

### Special-Status Plant Species Detected or Moderate to High Potential to Occur on the Project Site

Scientific Name	Common Name	Status: Federal/State/Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/CRPR	Habitat Requirements/ Life Form/Blooming Period/Elevation Range	Status on Site or Potential to Occur <sup>2</sup>
<i>Abronia maritima</i>	Red sand- verbena	None/None/None/None/4.2	Coastal dunes/Perennial herb/February–November/ 0–328 feet	Not expected to occur. There are no coastal dunes within the project study area.
<i>Abronia villosa</i> var. <i>aurita</i>	Chaparral sand- verbena	None/None/None/None/1B.1	Chaparral, coastal scrub, desert dunes; sandy soils/ Annual herb/January– September/246–5,249 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, the project site is not within the known elevation range of the species. A floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Acanthomintha ilicifolia</i>	San Diego thorn-mint	FT/SE/Covered/ Covered/1B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; clay, openings/ Annual herb/April–June/33– 3,150 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period and, the species was not observed on site.
<i>Acmispon prostratus</i>	Nuttall's lotus	None/None/None/Covered/1B.1	Coastal dunes, coastal scrub; sandy soils/Annual herb/March–July/0–33 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Adolphia californica</i>	California adolphia	None/None/None/None/2.1	Chaparral, coastal scrub, valley and foothill grassland; clay soils/Deciduous shrub/ December–May/ 148–2,428 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, the project site is not within the known elevation range of the species. A floristic survey was conducted on site during this conspicuous shrubs' blooming period, and the species was not observed on site.

## APPENDIX F (Continued)

Scientific Name	Common Name	Status: Federal/State/Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/CRPR	Habitat Requirements/ Life Form/Blooming Period/Elevation Range	Status on Site or Potential to Occur <sup>2</sup>
<i>Ambrosia pumila</i>	San Diego ambrosia	FE/None/Covered/ Covered/1B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; sandy loam or clay, often in disturbed areas, sometimes alkaline/ Rhizomatous herb/ April–October/66–1,362 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i>	Del Mar manzanita	FE/None/Covered/ Covered/1B.1	Chaparral; maritime, sandy soils/Evergreen shrub/ December–June/ 0–1,198 feet	Not expected to occur. There is no chaparral vegetation or maritime, sandy soils on the project site. Additionally, a floristic survey was conducted on site during this species' blooming period, and the evergreen shrub was not observed on site.
<i>Artemisia palmeri</i>	San Diego sagewort	None/None/None/None/4.2	Chaparral, coastal scrub, riparian forest, riparian scrub, riparian woodland; sandy, mesic/Deciduous shrub/May–September/49–3,002 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Asplenium vespertinum</i>	Western spleenwort	None/None/None/None/4.2	Chaparral, cismontane woodland, coastal scrub; rocky soils/Rhizomatous herb/February–June/ 591–3,281 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, it is not rocky, and the project site is not within the known elevation range of the species. A floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Astragalus tener</i> var. <i>titi</i>	Coastal dunes milk-vetch	FE/SE/None/None/1B.1	Coastal bluff scrub, costal dunes, coastal prairie; often vernal mesic areas/ Annual herb/March–May/ 3–164 feet	Not expected to occur on site. There is no coastal bluff scrub, dunes, or prairie on site. Additionally, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.

## APPENDIX F (Continued)

Scientific Name	Common Name	Status: Federal/State/Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/CRPR	Habitat Requirements/ Life Form/Blooming Period/Elevation Range	Status on Site or Potential to Occur <sup>2</sup>
<i>Atriplex coulteri</i>	Coulter's saltbush	None/None/None/None/1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland; alkaline or clay soils/ Perennial herb/March–October/10–1,509 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period and the species was not observed on site.
<i>Atriplex pacifica</i>	South Coast saltscale	None/None/None/None/1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, playas/Annual herb/March–October/0–459 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period and the species was not observed on site.
<i>Atriplex serenana</i> var. <i>davidsonii</i>	Davidson's saltscale	None/None/None/None/1B.2	Coastal bluff scrub, coastal scrub; alkaline soils/Annual herb/April–October/ 33–656 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, the on-site soils are not alkaline. Additionally, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Baccharis vanessae</i>	Encinitas baccharis	FT/SE/Covered/ Covered/1B.1	Chaparral, cismontane woodland; sandstone/ Deciduous shrub/August–November/197–2,362 feet	Not expected to occur. Project study area is not within known elevation range of species, and vegetation on site is not suitable habitat for species.
<i>Viguiera laciniata</i>	San Diego County viguiera	None/None/None/None/4.2	Chaparral, coastal scrub/ Shrub/February–June/ 197–2,461 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, the project site is not within the known elevation range of the species. A floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.

## APPENDIX F (Continued)

Scientific Name	Common Name	Status: Federal/State/Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/CRPR	Habitat Requirements/ Life Form/Blooming Period/Elevation Range	Status on Site or Potential to Occur <sup>2</sup>
<i>Bloomeria clevelandii</i>	San Diego goldenstar	None/None/Covered/None/1B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; clay soils/Bulbiferous herb/April– May/164–1,526 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, the project site is not within the known elevation range of the species. A floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Brodiaea filifolia</i>	Thread-leaved brodiaea	FT/SE/Covered/ Covered/1B.1	Chaparral, cismontane woodland, coastal scrub, playas, valley and foothill grassland, vernal pools; often clay soils/Bulbiferous herb/March–June/ 82–3,675 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Brodiaea orcuttii</i>	Orcutt's brodiaea	None/None/Covered/None/1B.1	Closed-cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, vernal pools; mesic, clay, sometimes serpentine soils/ Bulbiferous herb/May–July/ 98–5,551 feet	Not expected to occur. Vegetation on site is not suitable habitat for species. A floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Camissoniopsis lewisii</i>	Lewis' evening- primrose	None/None/None/None/3	Coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland; sandy or clay soils/Annual herb/ March–May/0–984 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.

## APPENDIX F (Continued)

Scientific Name	Common Name	Status: Federal/State/Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/CRPR	Habitat Requirements/ Life Form/Blooming Period/Elevation Range	Status on Site or Potential to Occur <sup>2</sup>
<i>Ceanothus verrucosus</i>	Wart-stemmed ceanothus	None/None/Covered/ Covered/2.2	Chaparral/Evergreen shrub/December–May/ 3–1,247 feet	Not expected to occur on site. There is no chaparral within the project study area. Additionally, a floristic survey was conducted on site, and this evergreen shrub was not observed on site.
<i>Centromadia parryi</i> ssp. <i>australis</i>	Southern tarplant	None/None/None/None/1B.1	Marshes and swamps, valley and foothill grassland, vernal pools/Annual herb/May–November/ 0–1,394 feet	Not expected to occur on site. While there is marsh vegetation present, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Centromadia pungens</i> ssp. <i>laevis</i>	Smooth tarplant	None/None/None/None/1B.1	Chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland; alkaline soils/Annual herb/April– September/0–2,100 feet	Not expected to occur on site. While there is riparian vegetation present, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Chaenactis glabriuscula</i> var. <i>orcuttiana</i>	Orcutt's pincushion	None/None/None/None/1B.1	Coastal bluff scrub, coastal dunes; sandy soils/Annual herb/January–August/ 0–328 feet	Not expected to occur on site. There are no coastal dunes or coastal bluff scrub on site. Additionally, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Chorizanthe orcuttiana</i>	Orcutt's spineflower	FE/SE/Covered/ Covered/1B.1	Closed-cone coniferous forest, chaparral, coastal scrub; sandy openings/ Annual herb/March– May/10–410 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Chorizanthe polygonoides</i> var. <i>longispina</i>	Long-spined spineflower	None/None/None/None/1B.2	Chaparral, coastal scrub, meadows and seeps, valley and foothill grassland, vernal pools; often clay soils/Annual herb/April– July/98–5,020 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.

## APPENDIX F (Continued)

Scientific Name	Common Name	Status: Federal/State/Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/CRPR	Habitat Requirements/ Life Form/Blooming Period/Elevation Range	Status on Site or Potential to Occur <sup>2</sup>
<i>Cistanthe maritima</i>	Seaside cistanthe	None/None/None/None/4.2	Coastal bluff scrub, coastal scrub, valley and foothill grassland; sandy soils/Annual herb/March–June/16–984 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Clarkia delicata</i>	Delicate clarkia	None/None/None/None/1B.2	Chaparral, cismontane woodland; often gabbroic soils/Annual herb/April–June/771–3,281 feet	Not expected to occur. Project study area is not within known elevation range of species and vegetation on site is not suitable habitat for species. Additionally, there are no gabbroic soils within the project study area. A floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i>	Summer holly	None/None/Covered/Covered/1B.2	Chaparral, cismontane woodland/Evergreen shrub/April–June/98–2,592 feet	Not expected to occur on site. There is no suitable vegetation within the project study area. Additionally, a floristic survey was conducted on site, and this evergreen shrub was not observed on site.
<i>Convolvulus simulans</i>	Small-flowered morning-glory	None/None/None/None/4.2	Chaparral, coastal scrub, valley and foothill grassland; serpentinite seeps/Annual herb/March–July/98–2,297 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Corethrogyne filaginifolia</i> var. <i>incana</i>	San Diego sand aster	None/None/Covered/Covered/1B.1	Coastal bluff scrub, chaparral, coastal scrub/Perennial herb/June–September/10–377 feet	Low potential to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub <sup>1</sup> within the project study area, the project study area is approximately 15 miles from known occurrences (CDFG 2012). Additionally, while this species' known blooming time begins in June, <i>Corethrogyne</i> species that occur in San Diego can be, at a minimum, identified to genus in May. No <i>Corethrogyne</i> species were detected during the floristic survey conducted on site.

<sup>1</sup> It is important to note that the 0.03 acre of Diegan coastal sage scrub within the project study area will not be impacted by the proposed project.

## APPENDIX F (Continued)

Scientific Name	Common Name	Status: Federal/State/Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/CRPR	Habitat Requirements/ Life Form/Blooming Period/Elevation Range	Status on Site or Potential to Occur <sup>2</sup>
<i>Corethrogyne filaginifolia</i> var. <i>linifolia</i>	Del Mar Mesa sand aster	None/None/Covered/ Covered/1B.1	Coastal bluff scrub, chaparral (maritime, openings), coastal scrub; sandy soils/Perennial herb/ May–September/ 49–492 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, the project site is not within the known elevation range of the species. Additionally, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Deinandra paniculata</i>	Paniculate tarplant	None/None/None/None/4.2	Coastal scrub, valley and foothill grassland, vernal pools; usually vernally mesic/Annual herb/April– November/82–3,084 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Dichondra occidentalis</i>	Western dichondra	None/None/None/None/4.2	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/ Annual herb/March–July/ 164–1,640 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, the project site is not within the known elevation range of the species. A floristic survey was conducted on site when this species would have been visible, and the species was not observed on site.
<i>Dudleya blochmaniae</i> ssp. <i>blochmaniae</i>	Blochman's dudleya	None/None/Covered/ Covered/1B.1	Coastal bluff scrub, chaparral, coastal scrub, valley and foothill grassland; often clay or serpentinite soils/perennial herb/April– June/16–1,476 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Dudleya brevifolia</i>	Short-leaved dudleya	None/SE/None/ Covered/1B.1	Chaparral, coastal scrub; Torrey sandstone/Perennial herb/April–May/ 98–1,148 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, there are no Torrey sandstone substrates on site. Additionally, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.

## APPENDIX F (Continued)

Scientific Name	Common Name	Status: Federal/State/Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/CRPR	Habitat Requirements/ Life Form/Blooming Period/Elevation Range	Status on Site or Potential to Occur <sup>2</sup>
<i>Dudleya multicaulis</i>	Many-stemmed dudleya	None/None/None/None/1B.2	Chaparral, coastal scrub, valley and foothill grassland; often clay soils/Perennial herb/April–July/49–2,592 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Dudleya variegata</i>	Variegated dudleya	None/None/None/None/1B.2	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools; clay soils/Perennial herb/April–June/10–1,903 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Dudleya viscida</i>	Sticky dudleya	None/None/Covered/Covered/1B.2	Coastal bluff scrub, chaparral, cismontane woodland, coastal scrub; rocky/Perennial herb/May–June/33–1,804 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, the scrub is not rocky. Additionally, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Eryngium aristulatum</i> var. <i>parishii</i>	San Diego button-celery	FE/SE/Covered/Covered/1B.1	Coastal scrub, valley and foothill grassland, vernal pools; mesic soils/Annual and perennial herb/April–June/66–2,034 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Eryngium pendletonense</i>	Pendleton button-celery	None/None/None/None/1B.1	Coastal bluff scrub, valley and foothill grassland, vernal pools; clay, vernal mesic soils/Perennial herb/April–June/49–361 feet	Not expected to occur on site. There is no suitable vegetation within the project study area. Additionally, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Erysimum ammophilum</i>	Sand-loving wallflower	None/None/None/None/1B.2	Chaparral, coastal dunes, coastal scrub; sandy, openings/Perennial herb/February–June/0–197 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.

## APPENDIX F (Continued)

Scientific Name	Common Name	Status: Federal/State/Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/CRPR	Habitat Requirements/ Life Form/Blooming Period/Elevation Range	Status on Site or Potential to Occur <sup>2</sup>
<i>Euphorbia misera</i>	Cliff spurge	None/None/Covered/ Covered/2.2	Coastal bluff scrub, coastal scrub, Mojavean desert scrub; rocky/Shrub/ December–August/ 33–1,640 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this conspicuous shrub's blooming period, and the species was not observed on site.
<i>Ferocactus viridescens</i>	San Diego barrel cactus	None/None/Covered/ Covered/2.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools/ Stem succulent/May–June/ 10–1,476 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this conspicuous succulent's blooming period, and the species was not observed on site.
<i>Harpagonella palmeri</i>	Palmer's grapplinghook	None/None/None/None/4.2	Chaparral, coastal scrub, valley and foothill grassland; clay soils/Annual herb/ March–May/66–3,133 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Hazardia orcuttii</i>	Orcutt's hazardia	FC/ST/Covered/ Covered/1B.1	Chaparral, coastal scrub; often clay soils/Evergreen shrub/August–October/ 262–279 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, the project site is not within the known elevation range of the species. Additionally, it is a conspicuous, perennial shrub that, if present on site, would have been easily observed during floristic surveys.
<i>Heterotheca sessiliflora</i> ssp. <i>sessiliflora</i>	Beach goldenaster	None/None/None/None/1B.1	Chaparral, coastal dunes, coastal scrub/Perennial herb/March–December/ 0–4,019 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Holocarpha virgata</i> ssp. <i>elongata</i>	Graceful tarplant	None/None/None/None/4.2	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/ Annual herb/May–November/197–3,609 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, the project site is not within the known elevation range of the species. A floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.

## APPENDIX F (Continued)

Scientific Name	Common Name	Status: Federal/State/Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/CRPR	Habitat Requirements/ Life Form/Blooming Period/Elevation Range	Status on Site or Potential to Occur <sup>2</sup>
<i>Hordeum intercedens</i>	Vernal barley	None/None/None/None/3.2	Coastal dunes, coastal scrub, valley and foothill grassland, vernal pools/Annual herb/March–June/16–3,281 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Horkelia truncata</i>	Ramona horkelia	None/None/None/None/1B.3	Chaparral, cismontane woodland; clay, gabbroic soils/Perennial herb/May–June/1,312–4,265 feet	Not expected to occur. Project study area is not within known elevation range of species and vegetation on site is not suitable habitat for species. A floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Isocoma menziesii</i> var. <i>decumbens</i>	Decumbent goldenbush	None/None/None/None/1B.2	Chaparral, coastal scrub; sandy, often disturbed areas/Shrub/April–November/33–443 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this conspicuous shrub's blooming period, and the species was not observed on site.
<i>Iva hayesiana</i>	San Diego marsh-elder	None/None/Covered/ Covered/2.2	Marshes and swamps, playas/Perennial herb/April–October/33–1,640 feet	Not expected to occur on site. While there is marsh vegetation present, a floristic survey was conducted on site during this species' blooming period, and the easily detectable species was not observed on site.
<i>Juncus acutus</i> var. <i>leopoldii</i>	Southwestern spiny rush	None/None/None/None/4.2	Coastal dunes (mesic), meadows and seeps (alkaline seeps), coastal saltwater marsh/ Rhizomatous herb/May–June/10–2,953 feet	Not expected to occur on site. While there is marsh vegetation present, a floristic survey was conducted on site during this species' blooming period, and the easily detectable species was not observed on site.
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	None/None/None/None/1B.1	Marshes and swamps (coastal salt), playas, vernal pools/Annual herb/ February–June/3–4,003 feet	Not expected to occur on site. While there is marsh vegetation present, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.

## APPENDIX F (Continued)

Scientific Name	Common Name	Status: Federal/State/Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/CRPR	Habitat Requirements/ Life Form/Blooming Period/Elevation Range	Status on Site or Potential to Occur <sup>2</sup>
<i>Lepidium virginicum</i> var. <i>robinsonii</i>	Robinson pepper-grass	None/None/None/None/1B.2	Chaparral, coastal scrub/Annual herb/January– July/3–2,904 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Leptosyne maritima</i>	Sea dahlia	None/None/None/None/2.2	Coastal bluff scrub, coastal scrub/Perennial herb/March–May/16–492 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Lycium californicum</i>	California box- thorn	None/None/None/None/4.2	Coastal bluff scrub, coastal scrub/Shrub/March– August/16–492 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this conspicuous shrub's blooming period, and the species was not observed on site.
<i>Microseris douglasii</i> ssp. <i>platycarpa</i>	Small-flowered microseris	None/None/None/None/4.2	Cismontane woodland, coastal scrub, valley and foothill grassland, vernal pool; clay soils/Annual herb/March–May/ 49–3,510 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Mimulus diffusus</i>	Palomar monkeyflower	None/None/None/None/4.3	Chaparral, lower montane coniferous forest; sandy or gravelly soils/Annual herb/ April–June/ 4,003–6,004 feet	Not expected to occur. Project study area is not within known elevation range of species, and vegetation on site is not suitable habitat for species. Additionally, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Monardella hypoleuca</i> ssp. <i>lanata</i>	Felt-leaved monardella	None/None/None/None/1B.2	Chaparral, cismontane woodland/Rhizomatous herb/June–August/ 984–5,167 feet	Not expected to occur. Project study area is not within known elevation range of species, and vegetation on site is not suitable habitat for species.

## APPENDIX F (Continued)

Scientific Name	Common Name	Status: Federal/State/Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/CRPR	Habitat Requirements/ Life Form/Blooming Period/Elevation Range	Status on Site or Potential to Occur <sup>2</sup>
<i>Mucronea californica</i>	California spineflower	None/None/None/None/4.2	Chaparral, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland; sandy soils/Annual herb/March–July/0–4,593 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Myosurus minimus</i> ssp. <i>apus</i>	Little mousetail	None/None/Covered/Covered/3.1	Valley and foothill grassland, vernal pools/Annual herb/ March–June/66–2,100 feet	Not expected to occur on site. There is no suitable vegetation within the project study area. Additionally, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Nama stenocarpum</i>	Mud nama	None/None/None/None/2.2	Marshes and swamps; lake margins, riverbanks/Annual and perennial herb/January–July/16–1,640 feet	Not expected to occur on site. While there is marsh vegetation present, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Navarretia fossalis</i>	Spreading navarretia	FT/None/Covered/Covered/1B.1	Chenopod scrub, marshes and swamps (assorted shallow freshwater), playas, vernal pools/Annual herb/ April–June/98–2,149 feet	Not expected to occur on site. While there is marsh vegetation present, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Nemacaulis denudata</i> var. <i>denudata</i>	Coast woolly-heads	None/None/None/None/1B.2	Coastal dunes/Annual herb/ April–September/0–328 feet	Not expected to occur on site. There are no coastal dunes within the project study area. Additionally, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Nemacaulis denudata</i> var. <i>gracilis</i>	Slender cottonheads	None/None/None/None/2.2	Coastal dunes, desert dunes, Sonoran desert scrub/Annual herb/April–May/–164–1,312 feet	Not expected to occur on site. There are no dunes within the project study area. Additionally, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.

## APPENDIX F (Continued)

Scientific Name	Common Name	Status: Federal/State/Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/CRPR	Habitat Requirements/ Life Form/Blooming Period/Elevation Range	Status on Site or Potential to Occur <sup>2</sup>
<i>Nolina cismontana</i>	Chaparral nolina	None/None/None/None/1B.2	Chaparral, coastal scrub; sandstone or gabbroic soils/Evergreen shrub/ May–July/459–4,183 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, the project site is not within the known elevation range of the species, and no sandstone or gabbroic soils are present. Additionally, it is a conspicuous shrub that, if present on site, would have been easily observed during floristic surveys.
<i>Orcuttia californica</i>	California Orcutt grass	FE/SE/Covered/ Covered/1B.1	Vernal pools/Annual herb/ April–August/49–2,165 feet	Not expected to occur on site. There are no vernal pools on site. Additionally, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Orobancha parishii</i> ssp. <i>brachyloba</i>	Short-lobed broomrape	None/None/None/None/4.2	Coastal bluff scrub, coastal dunes, coastal scrub; sandy soils/Perennial herb parasitic/April–October/10– 1,001 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Phacelia ramosissima</i> <i>var. austrolitoralis</i>	South coast branching phacelia	None/None/None/None/3.2	Chaparral, coastal dunes, coastal scrub, marshes and swamps (coastal salt); sandy, sometimes rocky soils/perennial herb/March– August/16–984 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Phacelia stellaris</i>	Brand's star phacelia	FC/None/None/None/1B.1	Coastal dunes, coastal scrub/Annual herb/March– June/3–1,312 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.

## APPENDIX F (Continued)

Scientific Name	Common Name	Status: Federal/State/Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/CRPR	Habitat Requirements/ Life Form/Blooming Period/Elevation Range	Status on Site or Potential to Occur <sup>2</sup>
<i>Pinus torreyana</i> ssp. <i>torreyana</i>	Torrey pine	None/None/Covered/ Covered/1B.2	Closed-cone coniferous forest, chaparral; sandstone/Evergreen tree/246–525 feet	Not expected to occur. Project study area is not within known elevation range of species, and vegetation on site is not suitable habitat for species. Additionally, there are no sandstone soils within the project study area. A floristic survey was conducted on site, and this large, conspicuous tree was not observed on site.
<i>Psilocarphus brevissimus</i> var. <i>multiflorus</i>	Delta woolly- marbles	None/None/None/None/4.2	Vernal pools/annual herb/ May–June/33–1,640 feet	Not expected to occur on site. There are no vernal pools on site. Additionally, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Quercus dumosa</i>	Nuttall's scrub oak	None/None/Covered/ Covered/1B.1	Closed-cone coniferous forest, chaparral, coastal scrub; sandy, clay loam/ Evergreen shrub/49–1,312 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site, and this evergreen shrub was not observed on site.
<i>Quercus engelmannii</i>	Engelmann oak	None/None/Covered/ Covered/4.2	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland/Deciduous tree/ March–June/164–4,265 feet	Not expected to occur. Project study area is not within known elevation range of species, and vegetation on site is not suitable habitat for species. A floristic survey was conducted on site, and this large, conspicuous tree was not observed on site.
<i>Selaginella cinerascens</i>	Ashy spike- moss	None/None/None/None/4.1	Chaparral, coastal scrub/Rhizomatous herb/66–2,100 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, a floristic survey was conducted on site, and the species was not observed on site.
<i>Stemodia durantifolia</i>	Purple stemodia	None/None/None/None/2.1	Sonoran desert scrub; often mesic, sandy soils/Perennial herb/January–December/ 591–984 feet	Not expected to occur. Project study area is not within known elevation range of species and vegetation on site is not suitable habitat for species. A floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.

## APPENDIX F (Continued)

Scientific Name	Common Name	Status: Federal/State/Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/CRPR	Habitat Requirements/ Life Form/Blooming Period/Elevation Range	Status on Site or Potential to Occur <sup>2</sup>
<i>Suaeda esteroa</i>	Estuary seablite	None/None/None/None/1B.2	Marshes and swamps (coastal salt)/Perennial herb/May–October/0–16 feet	Not expected to occur on site. While there is marsh vegetation present, a floristic survey was conducted on site during this species' blooming period, and the species was not observed on site.
<i>Suaeda taxifolia</i>	Woolly seablite	None/None/None/None/4.2	Coastal bluff scrub, coastal dunes, marshes and swamps (margins of coastal salt)/Evergreen shrub/ January–December/ 0–164 feet	Not expected to occur on site. While there is marsh vegetation present, a floristic survey was conducted on site, and this perennial, evergreen shrub was not observed on site.
<i>Tetracoccus dioicus</i>	Parry's tetracoccus	None/None/Covered/ Covered/1B.2	Chaparral, coastal sage scrub/Deciduous shrub/ April–May/541–3,281 feet	Not expected to occur. While there is a very small amount (0.03 acre) of Diegan coastal sage scrub within the project study area, the project site is not within the known elevation range of the species. Additionally, it is a conspicuous shrub that, if present on site, would have been easily observed during floristic surveys.

<sup>1</sup> Status:

FE: Federally listed as endangered.

FT: Federally listed as threatened.

SE: State-listed as endangered.

ST: State-listed as threatened.

SR: State-listed as rare.

CRPR: California Rare Plant Rank

1A (formerly List 1A): Plants Presumed Extinct in California

1B (formerly List 1B): Plants Rare, Threatened, or Endangered in California and Elsewhere

2 (formerly List 2): Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere

3 (formerly List 3): Plants About Which We Need More Information—A Review List

4 (formerly List 4): Plants of Limited Distribution—A Watch List

0.1: Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)

0.2: Fairly threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)

0.3: Not very threatened in California (<20% of occurrences threatened/low degree and immediacy of threat or no current threats known).

<sup>2</sup> "Vicinity" is based on a search of the CNDDDB and CNPS databases for the San Luis Rey quad and the eight surrounding quads conducted in August 2012.

## APPENDIX F (Continued)

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# **APPENDIX G**

*Special-Status Wildlife Species Not Expected or  
Low Potential to Occur on the Project Site*



## APPENDIX G

### Special-Status Wildlife Species Not Expected or Low Potential to Occur on the Project Site

Scientific Name	Common Name	Status: Federal/State/ Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/Other	Primary Habitat Associations	Status on Site or Potential to Occur
<i>Amphibians</i>				
<i>Anaxyrus [=Bufo] californicus</i>	Arroyo toad	FE/SSC/None/Covered	Stream channels for breeding (typically third order); adjacent stream terraces and uplands for foraging and wintering	Low potential to occur. There are no sandy stream terraces along stream channel, which arroyo toads prefer for burrowing. There are no arroyo toads recorded in the vicinity.* The closest CNDDDB record is 6.3 miles north on Camp Pendleton.
<i>Reptiles</i>				
<i>Actinemys marmorata</i>	Western pond turtle	None/SSC/None/Covered	Slow-moving permanent or intermittent streams, ponds, small lakes, reservoirs with emergent basking sites; adjacent uplands used during winter	Low to moderate potential to occur. There is suitable habitat for this species in the project area. This species has not been recorded in the vicinity.*
<i>Aspidoscelis hyperythra</i>	Orange-throated whiptail	None/SSC/Covered/Covered	Coastal sage scrub, chaparral, grassland, juniper, and oak woodland	Low potential to occur. The project area is dominated by wetland habitat, and this species does not likely occur in the project area. This species is recorded approximately 4 miles southeast of the project area (CDFG 2012a).
<i>Crotalus ruber</i>	Red-diamond rattlesnake	None/SSC/None/Covered	Variety of shrub habitats where there is heavy brush, large rocks, or boulders	Not expected to occur. No rocky habitats occur on site. The project area is dominated by wetland habitat, and this species does not likely occur in the project area. This species is recorded approximately 2.5 miles northwest of the project area (CDFG 2012a).
<i>Phrynosoma blainvillii</i>	Blainville's horned lizard	None/SSC/None/None	Coastal sage scrub, annual grassland, chaparral, oak and riparian woodland, coniferous forest	Low potential to occur. The project area is dominated by wetland habitat, and this species does not likely occur in the project area. This species is recorded approximately 5 miles east of the project area (CDFG 2012a).

## APPENDIX G (Continued)

Scientific Name	Common Name	Status: Federal/State/ Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/Other	Primary Habitat Associations	Status on Site or Potential to Occur
<i>Plestiodon skiltonianus interparietalis</i>	Coronado skink	None/SSC/None/None	Grassland, riparian and oak woodland; found in litter, rotting logs, under flat stones	Low potential to occur. There is some suitable leaf litter, but this site lacks rocks and other habitat requirements. This species has not been recorded in the vicinity.*
<i>Salvadora hexalepis virgultea</i>	Coast patch-nosed snake	None/SSC/None/None	Chaparral, washes, sandy flats, rocky areas	Not expected. No suitable vegetation or habitat features present. This species is recorded approximately 5 miles southeast of the project area (CDFG 2012a).
<i>Birds</i>				
<i>Accipiter striatus</i> (nesting)	Sharp-shinned hawk	None/WL/None/None	Nests in coniferous forests, ponderosa pine, black oak, riparian deciduous, mixed conifer, Jeffrey pine; winters in lowland woodlands and other habitats	This species does not nest in San Diego County. This species has potential to forage in the project area during the non-breeding season. This species was recorded in grid H6 where the project is located and surrounding grids (Unitt 2004).
<i>Agelaius tricolor</i> (nesting colony)	Tricolored blackbird	BCC/SSC/None/None	Nests near freshwater, emergent wetland with cattails or tules; forages in grasslands, woodland, agriculture	Low potential to occur in the freshwater marsh habitat on site. There is suitable nesting habitat; however, foraging habitat in the form of grassland, pastures, or agriculture fields is not available. This species was not observed during the focused bird surveys in 2012. This species was recorded in grids G5 and H5 near the project area (Unitt 2004).
<i>Aimophila ruficeps canescens</i>	Southern California rufous-crowned sparrow	None/WL/Covered/Covered	Grass-covered hillsides, coastal sage scrub, chaparral with boulders and outcrops	Low potential to occur. There is very limited coastal sage scrub habitat on site. This species was recorded in grids I5–6, G7, and H7 (Unitt 2004).
<i>Ammodramus savannarum</i> (nesting)	Grasshopper sparrow	None/SSC/None/None	Open grassland and prairie, especially native grassland with a mix of grasses and forbs	Not expected to occur. There is no grassland habitat on site. This species was recorded in grids G5–7 (Unitt 2004).

## APPENDIX G (Continued)

Scientific Name	Common Name	Status: Federal/State/ Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/Other	Primary Habitat Associations	Status on Site or Potential to Occur
<i>Amphispiza belli belli</i>	Bell's sage sparrow	BCC/WL/None/Covered <sup>1,3</sup>	Coastal sage scrub and dry chaparral along coastal lowlands and inland valleys	Not expected to occur. There is very limited coastal sage scrub habitat and the project is in a highly urbanized environment. This species was recorded in the winter in grid I7 (Unitt 2004).
<i>Aquila chrysaetos</i> (nesting and nonbreeding/wintering)	Golden eagle	BCC/WL, P/None/Covered	Open country, especially hilly and mountainous regions; grassland, coastal sage scrub, chaparral, oak savannas, open coniferous forest	Not expected to nest or winter on site. There is limited suitable foraging habitat on site and the project is in a highly urbanized environment. This species was recorded in the winter in grids G5–6 (Unitt 2004).
<i>Asio otus</i> (nesting)	Long-eared owl	None/SSC/None/None	Riparian, live oak thickets, other dense stands of trees, edges of coniferous forest	Not expected to nest on site. The project area does not support suitable nesting habitat in the form of dense closed canopy forest with open habitat adjacent for foraging and is in a very urbanized environment. This species was recorded in grid G7 and in grids G6 and H6 prior to 1997 (Unitt 2004).
<i>Athene cunicularia</i> (burrow sites and some winter sites)	Burrowing owl	BCC/SSC/None/None	Grassland, lowland scrub, agriculture, coastal dunes and other artificial open areas	Not expected to occur. The project area supports a very small amount of coastal sage scrub habitat, no grassland, and is highly urbanized. This species was recorded in grids G6–7 and H5 prior to 1997 (Unitt 2004).
<i>Campylorhynchus brunneicapillus sandiegensis</i> (San Diego and Orange Counties only)	Coastal cactus wren	BCC/SSC/None/Covered <sup>3</sup>	Southern cactus scrub, maritime succulent scrub, cactus thickets in coastal sage scrub	Not expected to occur. No suitable cactus or succulent scrub habitat. This species was recorded in grids G5 in the winter and I6 before 1997 (Unitt 2004).

## APPENDIX G (Continued)

Scientific Name	Common Name	Status: Federal/State/ Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/Other	Primary Habitat Associations	Status on Site or Potential to Occur
<i>Cerorhinca monocerata</i> (nesting colony)	Rhinoceros auklet	None/WL/None/None	Marine pelagic waters. Nests in a burrow on undisturbed, forested or unforested islands, and probably in cliff caves. Found off northern and central California, and south of northern Channel Islands. Breeds off Del Norte and Humboldt Cos., and Farallon Islands.	Not expected to nest. This species does not nest in the project area. This species occurs in the ocean off San Diego County during the winter and sometimes is found closer to shore (Unitt 2004).
<i>Chaetura vauxi</i> (nesting)	Vaux's swift	None/SSC/None/None	Breeds in cavities of trees in mature coniferous and deciduous forests. Roosts in nest trees. Less information available for winter range, but likely uses foothills and highlands.	No potential to nest. Moderate potential to occur during migration and could forage overhead at that time. There is no roosting or nesting habitat available in the project site. This species was recorded in grid H6 and some surrounding grids during winter and/or spring migration (Unitt 2004).
<i>Charadrius alexandrinus nivosus</i> (nesting)	Western snowy plover (coastal population)	FT, BCC/SSC/Covered, OW/Covered	Nests primarily on coastal beaches, in flat open areas, with sandy or saline substrates; less commonly in salt pans, dredged spoil disposal sites, dry salt ponds, and levees.	Not expected to nest on site. This species nests on coastal beaches; site is approximately 1.5 miles from the coast. This species was recorded in grids I5–6, grid H5 prior 1997, and in grid G5 as a presumed migrant or nonbreeder (Unitt 2004).
<i>Chlidonias niger</i> (nesting colony)	Black tern	None/SSC/None/None	Freshwater lakes, marshes, ponds, coastal lagoons	This species does not nest in San Diego County (Unitt 2004). This species has been recorded in the area during migration (Unitt 2004) and could use the project area as stopover habitat.

## APPENDIX G (Continued)

Scientific Name	Common Name	Status: Federal/State/ Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/Other	Primary Habitat Associations	Status on Site or Potential to Occur
<i>Contopus cooperi</i> (nesting)	Olive-sided flycatcher	BCC/SSC/None/None	Breeds in montane and coniferous forests. Typically found in or near forest habitats during winter.	Not expected to nest. There is no suitable nesting habitat for this species on site, and the species typically occurs in montane areas with conifer forests. Could occur during migration. This species was recorded during migration in grids H5-6, G6, and I5 (Unitt 2004).
<i>Eremophila alpestris actia</i>	California horned lark	None/WL/None/None	Open habitats, grassland, rangeland, shortgrass prairie, montane meadows, coastal plains, fallow grain fields	Low potential to occur. There is very limited upland habitat in the project area. This species was recorded in grids G6-7, H5-7, and I6-7 (Unitt 2004).
<i>Falco columbarius</i> (wintering)	Merlin	None/WL/None/None	Open to semi-open areas. Coastlines, wetlands, woodlands, agricultural fields, and grasslands. Winter (nonbreeding) range includes western U.S. and Central America.	High potential to occur during the winter. There is suitable foraging habitat in the project area. This species was recorded in the winter in grids G5-7, H5, and I6 (Unitt 2004).
<i>Falco peregrinus anatum</i> (nesting)	American peregrine falcon	BCC, (FD)/(SD), P/Covered/Covered	Nests on cliffs, buildings, bridges. Forages in wetlands, riparian, meadows, croplands, especially where waterfowl are present.	Not expected to nest. High potential to forage in the project area. This species was recorded in grid G5 (Unitt 2004).
<i>Gavia immer</i> (nesting)	Common loon	None/SSC/None/ None	Estuarine and subtidal marine habitats along entire coast (Sept-May). Uncommon on large, deep lakes in valleys and foothills; common migrant along coast, including offshore, in November and May.	Low potential to occur due to lack of open water within the project area. This species is likely found in the lagoon to the west of the project area. This species was recorded in grids H5 and I6 (Unitt 2004).

## APPENDIX G (Continued)

Scientific Name	Common Name	Status: Federal/State/ Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/Other	Primary Habitat Associations	Status on Site or Potential to Occur
<i>Lanius ludovicianus</i> (nesting)	Loggerhead shrike	BCC/SSC/None/None	Open ground including grassland, coastal sage scrub, broken chaparral, agriculture, riparian, open woodland	Low potential to nest or forage on the project site due to a lack of nesting habitat and high level of urbanization around the site. There are fragmented breeding locations along the coast, including grid H6 (Unitt 2004), but this species would have been observed if it occurred on site.
<i>Larus californicus</i> (nesting colony)	California gull	None/WL/None/None	Along the coast: sandy beaches, mudflats, rocky intertidal and pelagic areas of marine and estuarine habitats, fresh and saline emergent wetlands. Inland: lacustrine, riverine, and cropland habitats; landfill dumps; and open lawns in cities. Nests in alkali and freshwater lacustrine habitats; adults roost along shorelines, landfills, pastures, and on islands.	Low potential to occur. There is some potential nesting habitat, but this species would have been observed if it was nesting on site. This species was recorded during winter and migration in grid H6 and most of the surrounding grids (Unitt 2004)
<i>Laterallus jamaicensis coturniculus</i>	California black rail	BCC/ST, P/None/None	Saline, brackish, and fresh emergent wetlands	Not expected to occur on site. This species has been extirpated from San Diego County (Unitt 2004). There are two records from 1952 and 1973 within 18 miles of the project area (CDFG 2012b); however, only vagrants have been reported in the nonbreeding season (Unitt 2004).
<i>Leucophaeus atricilla</i> (nesting colony)	Laughing gull	None/WL/None/None	Nests in a range of habitats, including salt marshes, rock and vegetated islands, and sandy beaches.	Not expected to breed. The project area is outside of the known breeding and wintering range for this species. This species has been recorded in very low numbers in Buena Vista Lagoon (Unitt 2004).

## APPENDIX G (Continued)

Scientific Name	Common Name	Status: Federal/State/ Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/Other	Primary Habitat Associations	Status on Site or Potential to Occur
<i>Numenius americanus</i> (nesting)	Long-billed curlew	BCC/WL/None/None	Nests in upland shortgrass prairies and wet meadows in northeast California; winters in coastal estuaries, open grasslands, and croplands.	Not expected to nest. The project area is located outside of the known breeding range for this species. This species was recorded in the winter or migration in grids H6 and I6–7 (Unitt 2004).
<i>Pandion haliaetus</i> (nesting)	Osprey	None/WL/Covered, OW/Covered	Large waters (lakes, reservoirs, rivers) supporting fish; usually near forest habitats, but widely observed along the coast	Not expected to nest on site due to lack of suitable nesting areas. High potential to forage over site and in nearby lagoon. This species was recorded as presumed migrants in grids H5–6 (Unitt 2004).
<i>Passerculus sandwichensis beldingi</i>	Belding's savannah sparrow	None/SE/Covered, OW/Covered <sup>1, 2</sup>	Saltmarsh, pickleweed	Low potential to occur. There is a small amount of coastal salt marsh habitat on site; however, it is very patchy and of poor quality. This species was not observed during focused bird surveys. This species was recorded in grids H6 and I6 as probably breeding (Unitt 2004). Six territories were recorded at Buena Vista Lagoon in 2001 (Unitt 2004).
<i>Passerculus sandwichensis rostratus</i> (nonbreeding/wintering)	Large-billed savannah sparrow	None/SSC/Covered, OW/Covered <sup>1, 2</sup>	Saltmarsh, pickleweed	This species only occurs during the winter and has low potential to occur due to lack of coastal saltmarsh habitat and location inland from the coastal zone. This species was recorded in the winter in grid H6 and the surrounding grids (Unitt 2004).
<i>Pelecanus erythrorhynchos</i> (nesting colony)	American white pelican	None/SSC/None/ None	Open water, coastal bays, large inland lakes; nests at large lakes in Klamath Basin; common migrant at Salton Sea and Colorado River, and rare during winter at Salton Sea, Morro Bay, San Diego Bay	Not expected to nest. The project site does not support nesting habitat for this species. This species was recorded in the winter in grids G6 and H5–6 (Unitt 2004).

## APPENDIX G (Continued)

Scientific Name	Common Name	Status: Federal/State/ Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/Other	Primary Habitat Associations	Status on Site or Potential to Occur
<i>Pelecanus occidentalis californicus</i> (nesting colony and communal roosts)	California brown pelican	(FD)/(SD), P/Covered, OW/Covered	Open sea, large water bodies, coastal bays, and harbors	Not expected to nest. The project site does not support nesting habitat for this species. This species was recorded during the spring migration in grid H6 and coastal grids during the winter (Unitt 2004).
<i>Phalacrocorax auritus</i> (nesting colony)	Double-crested cormorant	None/WL/None/None	Lakes, rivers, reservoirs, estuaries, ocean; nests in tall trees, rock ledges on cliffs, rugged slopes	Not expected to nest. The project site does not support nesting habitat for this species. The species may fly overhead. This species was recorded as presumed migrants or winter visitors in grid H6 and surrounding grids (Unitt 2004).
<i>Piranga rubra</i> (nesting)	Summer tanager	None/SSC/None/None	Nests in riparian woodland; winter habitats include parks and residential areas	Not expected to nest on site. The project area is outside of its known range in San Diego County. This species was recorded in the winter in grid I6 (Unitt 2004).
<i>Plegadis chihi</i> (nesting colony)	White-faced ibis	None/WL/Covered, OW/Covered	Nests in marsh; winter foraging in shallow lacustrine waters, muddy ground of wet meadows, marshes, ponds, lakes, rivers, flooded fields, and estuaries	Not expected to nest due to limited suitable habitat. Moderate potential to forage west of project site. Not observed during focused bird surveys. This species was recorded as a presumed migrant or nonbreeder in grid H6 and I6, and a breeder in grids H7 and G6-7 (Unitt 2004).
<i>Poliophtila californica californica</i>	Coastal California gnatcatcher	FT/SSC/Covered/Covered <sup>1</sup>	Coastal sage scrub, coastal sage scrub-chaparral mix, coastal sage scrub-grassland ecotone, riparian in late summer	Very low potential to occur due to very small amount of coastal scrub on the project site and urbanized environment. This species was recorded in grid H6 and surrounding grids (Unitt 2004).

## APPENDIX G (Continued)

Scientific Name	Common Name	Status: Federal/State/ Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/Other	Primary Habitat Associations	Status on Site or Potential to Occur
<i>Progne subis</i> (nesting)	Purple martin	None/SSC/None	Historically nested in tall sycamores, pines, oak woodlands, coniferous forest; forages over riparian, forest and woodland. More commonly nests in man-made bird boxes. Found uncommonly throughout the state in wooded, low-elevation habitats. Rare and local breeder in the south in mountain ranges and along coast.	Not expected to occur. This species is a very rare breeder in southern California. This species was recorded in grid G6 as a presumed migrant or nonbreeder (Unitt 2004).
<i>Ptychoramphus aleuticus</i> (nesting colony)	Cassin's auklet	BCC/SSC/None/None	Breeds along the coast in a variety of island habitat from steep cliffs to flat terrain.	Not expected to nest. This species does not nest in the project area. This species occurs in the ocean off San Diego County during the winter and sometimes is found closer to shore (Unitt 2004).
<i>Riparia riparia</i> (nesting)	Bank swallow	None/ST/None/None	Nests in lowland country with soft banks or bluffs; open country and water during migration	This species has been extirpated from San Diego County and only occurs as a rare migrant (Unitt 2004). This species has been recorded at G5 and H5 during migration and winter (Unitt 2004).
<i>Rynchops niger</i> (nesting colony)	Black skimmer	BCC/SSC/None/None	Roosting takes place on sandy beaches or gravel bars; rarely alights on water; visitor to coastal estuaries and river mouths.	Not expected to nest. The project site does not support suitable nesting or roosting habitat for this species. This species was recorded in grid I6 as a presumed migrant or nonbreeder (Unitt 2004).

## APPENDIX G (Continued)

Scientific Name	Common Name	Status: Federal/State/ Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/Other	Primary Habitat Associations	Status on Site or Potential to Occur
<i>Selasphorus rufus</i> (nesting)	Rufous hummingbird	BCC/None/None/None	Breeds in coastal scrub, valley foothill hardwood, and valley foothill riparian habitats in northwestern U.S. and Canada. Migrates in woodland and scrub habitats.	No potential to nest. The project area is outside of the known breeding range for this species. Moderate potential to occur during migration. Rare visitor to coastal and southern California in the winter. This species was recorded during spring migration in grid G6 (Unitt 2004).
<i>Spinus lawrencei</i> (nesting)	Lawrence's goldfinch	BCC/None/None/None	Valley foothill hardwood, valley foothill hardwood-conifer, and, in southern California, desert riparian, palm oasis, pinyon-juniper, and lower montane habitats	Not expected to nest. This species prefers more arid habitats. This species was recorded as a presumed migrant or nonbreeder in grid I6 (Unitt 2004).
<i>Hydroprogne</i> [=Sterna] <i>caspia</i> (nesting colony)	Caspian tern	BCC/None/None/None	Breeds in wide variety of habitats, ranging from coastal estuarine, salt marsh, and barrier islands.	Not expected to nest on site. High potential to forage in the project area. This species is not known to nest in the area, but has been recorded in grids G5-7, H5-6, and I6 as presumed migrants or nonbreeders and in the winter (Unitt 2004).
<i>Thalasseus</i> [=Sterna] <i>elegans</i> (nesting colony)	Elegant tern	None/WL/Covered, OW/Covered <sup>1, 2</sup>	Coastal waters, estuaries, large bays and harbors, mudflats	Not expected to nest. Site is approximately 1.5 miles from the coast. This species was recorded as a presumed migrant or nonbreeder in grids H5 and I6 (Unitt 2004).
<i>Sternula</i> [=Sterna] <i>antillarum browni</i> (nesting colony)	California least tern	FE/SE, P/Covered/Covered	Coastal waters, estuaries, large bays and harbors, mudflats; nests on sandy beaches	Not expected to nest. Site is approximately 1.5 miles from the coast. This species was recorded as a presumed migrant or nonbreeder in grids G6-7, H5-6, and I5 (Unitt 2004).
<i>Xanthocephalus xanthocephalus</i> (nesting)	Yellow-headed blackbird	None/SSC/None/None	Nests in freshwater marsh and forages in annual grassland, native grassland, and agriculture.	Low potential to occur as a winter visitor or migrant. Although there is some suitable wetland habitat, this species would have been detected if it was breeding on site. This species was recorded as a presumed migrant or nonbreeder in grids G5-6 (Unitt 2004).

## APPENDIX G (Continued)

Scientific Name	Common Name	Status: Federal/State/ Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/Other	Primary Habitat Associations	Status on Site or Potential to Occur
<i>Mammals</i>				
<i>Chaetodipus fallax fallax</i>	Northwestern San Diego pocket mouse	None/SSC/None/Covered <sup>3</sup>	Coastal sage scrub, grassland, sage scrub-grassland ecotones, sparse chaparral; rocky substrates, loams, and sandy loams	Low potential to occur in the coastal sage scrub on site due to the small amount of habitat present. This species is recorded approximately 0.7 mile north of the project area (CDFG 2012a).
<i>Choeronycteris mexicana</i>	Mexican long-tongued bat	None/SSC/None/None/ WBWG:H	Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon-juniper woodland. Roosts in caves, mines, and buildings.	Not expected to occur. No suitable vegetation or roosting structures/microhabitat. This species is typically found south of the project area and into Mexico. This species has not been recorded in the vicinity.*
<i>Dipodomys stephensi</i>	Stephens' kangaroo rat	FE/ST/None/ Covered	Open habitat, grassland, sparse coastal sage scrub, sandy loam and loamy soils with low clay content; gentle slopes (<30%)	Low potential to occur. The upland habitat is very small, and the substrate is not suitable for this species. This species is recorded approximately 2.4 miles northeast of the project area (CDFG 2012a).
<i>Lasiurus xanthinus</i>	Western yellow bat	None/SSC/None/None/ WBWG:H	Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon-juniper woodland.	Low potential to occur. This species is typically found in more arid habitats. No suitable desert or pinyon-juniper vegetation is present. This species is recorded approximately 0.4 mile southwest of the project area (CDFG 2012a).
<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit	None/SSC/None/Covered <sup>3</sup>	Arid habitats with open ground; grasslands, coastal sage scrub, agriculture, disturbed areas, rangelands	Low potential to occur based on lack of suitable open or disturbed habitat on site. This species is recorded approximately 1.7 miles northwest of the project area (CDFG 2012a).
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	None/SSC/None/None	Coastal sage scrub, chaparral, pinyon-juniper woodland with rock outcrops, cactus thickets, dense undergrowth	Not expected to occur. No suitable desert habitats with dense undergrowth present. This species was recorded in the vicinity.*

## APPENDIX G (Continued)

Scientific Name	Common Name	Status: Federal/State/ Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/Other	Primary Habitat Associations	Status on Site or Potential to Occur
<i>Nyctinomops femorosaccus</i>	Pocketed free-tailed bat	None/SSC/None/None/ WBWG:M	Rocky desert areas with high cliffs or rock outcrops	Low potential to occur. This species is typically found in more arid habitats. No suitable rocky desert habitat. This species is recorded approximately 3.5 miles southeast of the project area (CDFG 2012a).
<i>Odocoileus hemionus</i>	Mule deer	None/None/None/Covered <sup>3</sup>	Coastal sage scrub, chaparral, riparian, woodlands, forest; often browses in open areas adjacent to cover	Not expected to occur. The project area is in an urbanized environment with Hwy 78 to the north and the Carlsbad Mall to the south. Fencing and adjacent land uses largely preclude large mammals from utilizing site. This species has not been recorded in the vicinity.*
<i>Perognathus longimembris pacificus</i>	Pacific pocket mouse	FE/SSC/None/Covered	Grassland, coastal sage scrub with sandy soils; along immediate coast	Not expected to occur based on lack of suitable upland habitat and sandy soils. This species is recorded approximately 4.4 miles northwest of the project area (CDFG 2012a).
<i>Puma concolor</i>	Mountain lion	None/None/None/Covered <sup>3</sup>	Occupies a wide variety of habitats.	Not expected to occur. The project area is in an urbanized environment with Hwy 78 to the north and the Carlsbad Mall to the south. Fencing and adjacent land uses largely preclude large mammals from utilizing site. This species has not been recorded in the vicinity.*
<i>Taxidea taxus</i>	American badger	None/SSC/None/None	Dry, open treeless areas, grasslands, coastal sage scrub	Not expected to occur. There is no suitable habitat for this species in the project area. This species is recorded approximately 7.3 miles east of the project area (CDFG 2012a).
<i>Invertebrates</i>				
<i>Branchinecta sandiegonensis</i>	San Diego fairy shrimp	FE/None/Covered, OW <sup>1</sup> /Covered <sup>1,4</sup>	Small, shallow vernal pools, occasionally ditches and road ruts	Not expected to occur. No vernal pools on site. This species has not been recorded in the vicinity.*

## APPENDIX G (Continued)

Scientific Name	Common Name	Status: Federal/State/ Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/Other	Primary Habitat Associations	Status on Site or Potential to Occur
<i>Euphydryas editha quino</i>	Quino checkerspot butterfly	FE/None/None/Covered	Sparsely vegetated hilltops, ridgelines, occasionally rocky outcrops; host plant <i>Plantago erecta</i> and nectar plants must be present	Not expected to occur. There is no suitable habitat for this species and it is not known to occur in this area. This species has not been recorded in the vicinity.*
<i>Euphyes vestris harbisoni</i>	Harbison's dun skipper	None/None/Covered, NE/Covered <sup>3</sup>	Restricted to wetland, riparian, oak woodlands, and chaparral habitats supporting host plant <i>Carex spissa</i> .	Not expected to occur. Host plant not observed during surveys. This species has not been recorded in the vicinity.*
<i>Panoquina errans</i>	Wandering (= saltmarsh) skipper	None/None/Covered, OW/Covered <sup>1, 2</sup>	Salt marsh from Los Angeles to Baja, Mexico	Low potential to occur. There is very limited host plant present on site. This species has not been recorded in the vicinity.*
<i>Streptocephalus woottoni</i>	Riverside fairy shrimp	FE/None/OW <sup>1</sup> /Covered <sup>1, 2</sup>	Deep, long-lived vernal pools, vernal pool-like seasonal ponds, stock ponds; warm water pools that have low to moderate dissolved solids	Not expected. No vernal pools on site. This species has not been recorded in the vicinity.*
<i>Fish</i>				
<i>Eucyclogobius newberryi</i>	Tidewater goby	FE/SSC/None/None/AFS:EN	Low-salinity waters in coastal wetlands	Not expected. Tidewater goby are only expected in lagoons and streams upstream from lagoons that have tidal influence. The Buena Vista Lagoon has no tidal influence. This species was recorded in the Buena Vista Lagoon in 1984 (CDFG 2012a).
<i>Gila orcutti</i>	Arroyo chub	None/SSC/None/None/ AFS:VU	Warm, fluctuating streams with slow-moving or backwater sections of warm to cool streams at depths > 40 centimeters; substrates of sand or mud	Not expected. Arroyo chubs are native to stream systems of the Los Angeles basin as far south as southern Orange County. This species has not been recorded in the vicinity.*

## APPENDIX G (Continued)

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The federal and state status of species primarily is based on the Special Animals List (January 2011) (CDFG 2011).

\*"Vicinity" refers to species observed in the USGS 7.5-minute San Luis Rey quadrangle (CDFG 2012a) and/or Grids G5–7, H5–7, and I6–7 of the San Diego Bird Atlas (SDNHM 2012b).

### **Federal Designations (August 2012):**

BCC Fish and Wildlife Service: Birds of Conservation Concern  
(FD) Federally delisted; monitored for 5 years.  
FE Federally listed as Endangered.  
FT Federally listed as Threatened.

### **State Designations (August 2012):**

SSC California Species of Special Concern  
P California Department of Fish and Game Protected and Fully Protected Species  
(SD) State-delisted.  
SE State-listed as Endangered.  
ST State-listed as Threatened.  
WL California Department of Fish and Game Watch List

### **Coverage under Habitat Management Plan (HMP) for Natural Communities in the City of Carlsbad (City of Carlsbad 2004)**

Covered—Take of species permitted under HMP.

NE—Take of species permitted subject to HMP conditions for Narrow Endemic species.

OW - Take of species permitted subject to HMP conditions for Obligate Wetlands species.

OW<sup>1</sup> Species Coverage contingent on funding for management of conserved areas.

### **Proposed for Coverage under Oceanside Subarea Plan—Draft Oceanside HCP/NCCP (City of Oceanside 2009)**

Covered—Proposed Take of species permitted under HCP/NCCP.

<sup>1</sup> Coverage contingent upon approval of other local Subarea Plan(s).

<sup>2</sup> Proposed for coverage under draft Subarea Plan, but MHCP requires Subarea Plans to include additional conservation measures.

<sup>3</sup> Proposed for coverage under draft Subarea Plan, but species not covered under MHCP.

<sup>4</sup> Assumes conservation in critical locations in major amendment area.

### **Other:**

AFS American Fisheries Society Endangered classification  
EN: Endangered  
VU: Vulnerable

WBWG Western Bat Working Group High Priority species  
M: Species warrants closer evaluation, research, and conservation actions  
H: Species are imperiled or are at high risk of imperilment

# **APPENDIX H**

*Special-Status Wildlife Species Detected or  
Moderate to High Potential to Occur  
on the Project Site*



## APPENDIX H

### Special-Status Wildlife Species Detected or Moderate to High Potential to Occur on the Project Site

Scientific Name	Common Name	Status: Federal/State/Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/Other	Primary Habitat Associations	Status on Site or Potential to Occur
<i>Amphibians</i>				
<i>Spea</i> [= <i>Scaphiopus</i> ] <i>hammondi</i>	Western spadefoot	None/SSC/None/Covered	Most common in grasslands, coastal sage scrub near rain pools or vernal pools; riparian habitats	High potential to occur. There is some slow-moving water and ponded areas near the emergent vegetation with some adjacent upland habitat along the northern side of the creek. This species has not been recorded in the vicinity.*
<i>Reptiles</i>				
<i>Thamnophis hammondi</i>	Two-striped garter snake	None/SSC/None/None	Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools	High potential to occur. There is suitable habitat for this species. This species has not been recorded in the vicinity.*
<i>Thamnophis sirtalis</i> ssp.	South Coast garter snake (Coastal plain from Ventura County to San Diego County, from sea level to about 850 meters)	None/SSC/None/None	Marshes, meadows, sloughs, ponds, slow-moving water courses	High potential to occur. There is suitable habitat for this species. This species is recorded approximately 3 miles north of the project area (CDFG 2012a).
<i>Birds</i>				
<i>Accipiter cooperii</i> (nesting)	Cooper's hawk	None/WL/Covered/Covered <sup>3, 4</sup>	Riparian and oak woodlands, montane canyons	High potential to forage on site. Moderate to high potential to nest in the southern willow scrub. They are more likely to nest in the eucalyptus trees south of the creek but have been documented as nesting in willow trees. This species was recorded in grid H6 where the project is located and surrounding grids (Unitt 2004).
<i>Circus cyaneus</i> (nesting)	Northern harrier	None/SSC/None/None	Open wetlands (nesting), pasture, old fields, dry uplands, grasslands, rangelands, coastal sage scrub	Moderate potential to nest. There is suitable wetland habitat on site; however, there is no suitable grassland or agriculture land for foraging, and the project site is in an urbanized environment. This species was not observed during focused bird surveys. This species was recorded in grids G5-7, H6, and I6-7 (Unitt 2004).

## APPENDIX H (Continued)

Scientific Name	Common Name	Status: Federal/State/Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/Other	Primary Habitat Associations	Status on Site or Potential to Occur
<i>Cistothorus palustris clarkae</i>	Clark's marsh wren	None/SSC/None/None	Marshland habitats. Builds nests in cattails ( <i>Typha</i> spp.) and bulrush ( <i>Schoenoplectus</i> spp.). Winter habitat is slightly more variable, but similar to breeding habitat. Occurs in the coastal region of Southern California; found in some inland areas of Riverside County.	Observed on site during focused bird surveys. This species was observed doing nest building behavior during the focused surveys.
<i>Elanus leucurus</i> (nesting)	White-tailed kite	None/P/None/None	Open grasslands, savanna-like habitats, agriculture, wetlands, oak woodlands, riparian	Observed foraging adjacent to and along the border of the project site. This species was not observed nesting during 2012 surveys. Moderate potential to nest in the willows on site or in the eucalyptus trees south of the project area. Suitable open habitat, wetlands, and riparian vegetation present; however the amount of suitable foraging habitat is very small.
<i>Empidonax traillii extimus</i> (nesting)	Southwestern willow flycatcher	FE/SE/Covered, OW/Covered	Riparian woodlands along streams and rivers with mature, dense stands of willows or alders; may nest in thickets dominated by tamarisk	Moderate potential to nest on site. High potential to occur during migration. Southwestern willow flycatcher was not observed during 2012 focused surveys for least Bell's vireo ( <i>Vireo bellii pusillus</i> ) and willow flycatcher. However, a willow flycatcher ( <i>Empidonax traillii</i> ) was observed in 2010 during surveys for an adjacent project. That willow flycatcher could have been a southwestern willow flycatcher that was migrating through the region and did not remain on site to breed; however, based on the early date of observation, it is likely a migrant of other subspecies of willow flycatcher. Based on the lack of observations during the 2012 surveys, the migrant in 2010, and the patchy habitat, there is moderate potential for this species to breed on site.

## APPENDIX H (Continued)

Scientific Name	Common Name	Status: Federal/State/Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/Other	Primary Habitat Associations	Status on Site or Potential to Occur
<i>Falco columbarius</i> (wintering)	Merlin	None/WL/None/None	Open to semi-open areas. Coastlines, wetlands, woodlands, agricultural fields, and grasslands. Winter (nonbreeding) range includes western U.S. and Central America.	High potential to occur during the winter. There is suitable foraging habitat in the project area. This species was recorded in the winter in grids G5–7, H5, and I6 (Unitt 2004).
<i>Icteria virens</i> (nesting)	Yellow-breasted chat	None/SSC/Covered, OW/Covered	Dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush	High potential to occur. There is suitable nesting habitat for this species although it was not observed during surveys in 2012. This species was recorded in grid H6 and most of the surrounding grids (Unitt 2004).
<i>Ixobrychus exilis</i> (nesting)	Least bittern	BCC/SSC/None/ None	Dense emergent wetland vegetation, sometimes interspersed with woody vegetation and open water	Moderate potential to nest in the marsh wetland vegetation on site. This species has been recorded in the east basin of Buena Vista Lagoon and possibly further upstream (Unitt 2004).
<i>Picoides nuttallii</i> (nesting)	Nuttall's woodpecker	BCC/None/None/None	Lower elevation riparian deciduous and oak habitats	Observed on site. There is suitable habitat for this species in the southern willow scrub and adjacent trees. It is likely breeding on site.
<i>Rallus longirostris levipes</i>	Light-footed clapper rail	FE/SE, P/Covered, OW/Covered	Coastal saltmarsh	Moderate potential to occur. This species has been documented breeding in the Buena Vista Lagoon (Unitt 2004; CDFG 2012b); however, focused surveys for the clapper rail were negative (Konecny Biological Services 2012). It is possible that this species would forage in the freshwater marsh outside of the breeding season.
<i>Selasphorus sasin</i> (nesting)	Allen's hummingbird	BCC/None/None/None	Breeds in coastal scrub, valley foothill hardwood, and valley foothill riparian habitats. Migrates in woodland and scrub habitats.	Observed on site. High potential to nest based on the observation date of April 19. Has been recently observed nesting in Encinitas at San Diego Botanic Garden (San Diego County Birding 2012). There is limited confirmed breeding in San Diego County,

## APPENDIX H (Continued)

Scientific Name	Common Name	Status: Federal/State/Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/Other	Primary Habitat Associations	Status on Site or Potential to Occur
				and the project area is outside of the typical breeding range for this species. However, there are recent records of breeding (Unitt 2004) so the on-site observation is considered to be likely that of a breeding bird.
<i>Setophago petechia</i> (nesting)	Yellow warbler	BCC/SSC/None/None	Nests in lowland and foothill riparian woodlands dominated by cottonwoods, alders and willows; winters in a variety of habitats.	Observed on site. Several singing males were recorded during focused surveys. It is assumed they are nesting on site because they were detected during the entire breeding season.
<i>Siala mexicana</i>	Western bluebird	None/None/None/Covered <sup>3</sup>	Open forests of deciduous, coniferous or mixed trees, savanna, edges of riparian woodland	Moderate potential to occur. This species was recorded as a presumed migrant or nonbreeder in grid H6, but was recorded breeding and wintering in surrounding grids (Unitt 2004).
<i>Vireo bellii pusillus</i> (nesting)	Least Bell's vireo	FE, BCC/SE/Covered, OW/ Covered	Nests in southern willow scrub with dense cover within 1–2 meters of the ground; habitat includes willows, cottonwoods, baccharis, wild blackberry or mesquite on desert areas	One pair, confirmed to be breeding on site, and one single male was observed on site during focused surveys. An additional pair was observed during one survey visit early in the season and was presumed to be transitional. Breeds in southern willow scrub in the project area.
<b>Mammals</b>				
<i>Antrozous pallidus</i>	Pallid bat	None/SSC/None/None/ WBWG:H	Rocky outcrops, cliffs, and crevices with access to open habitats for foraging	Moderate potential to forage in the project area. No suitable rocky outcrops, cliffs, and crevices for roosting. This species is recorded approximately 3 miles north of the project area (CDFG 2012a).
<i>Chaetodipus californicus femoralis</i>	Dulzura pocket mouse	None/SSC/None/None	Coastal sage scrub, chaparral, riparian-scrub ecotone; more mesic areas	Moderate potential to occur. Suitable coastal sage scrub habitat on site is very small; however, there is riparian-scrub ecotone along the edges of the channel. This species is recorded approximately 4.3 miles southeast of the project area (CDFG 2012a).

## APPENDIX H (Continued)

Scientific Name	Common Name	Status: Federal/State/Coverage under Carlsbad HMP/Proposed for Coverage under Oceanside Subarea Plan/Other	Primary Habitat Associations	Status on Site or Potential to Occur
<i>Eumops perotis californicus</i>	Western mastiff bat	None/SSC/None/None/ WBWG:H	Roosts in small colonies in cracks and small holes, seeming to prefer man-made structures.	Moderate potential to forage in the project area. No suitable roosting structures/microhabitat. This species has not been recorded in the vicinity.*

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Covered—Proposed Take of species permitted under HCP/NCCP

<sup>1</sup> Coverage contingent upon approval of other local Subarea Plan(s).

<sup>2</sup> Proposed for coverage under draft Subarea Plan, but MHCP requires Subarea Plans to include additional conservation measures.

<sup>3</sup> Proposed for coverage under draft Subarea Plan, but species not covered under MHCP.

<sup>4</sup> Assumes conservation in critical locations in major amendment area.

### Other:

WBWG Western Bat Working Group High Priority species

H: Species are imperiled or are at high risk of imperilment

## APPENDIX H (Continued)

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